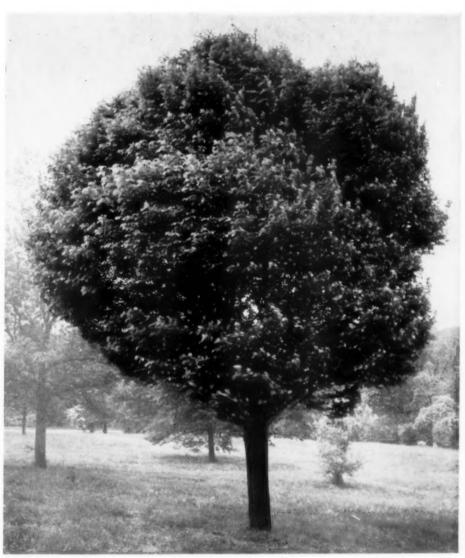
# AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

**SEPTEMBER 15, 1954** 



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ESTABLISHED 1875

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# AMERICAN NURSERYMAN

[Registered U. S. Patent Office]

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

VOL. C, No. 6

**SEPTEMBER 15, 1954** 

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# TIFFANY AND LILIBET WILL BE PRE-SOLD TO MILLIONS!

These two All-America Rose Selection Winners are certain to be big profit makers for you...here's why! Garden editors of newspapers have to date written better than 38 full pages of editorial about Tiffany and Lilibet roses! In addition, leading home and garden magazines have and will continue to carry full color illustrations and stories about these two winners. This kind of publicity, plus our own full color ads in practically all leading garden magazines is creating a tremendous demand. Stock and watch profits go UP!

Because of the usual shortage of current AARS winners, we suggest you order now while Tiffany and Lilibet plants are still available in No. 1 grade. In other varieties we still have an excellent assortment of No. 11/2 grade. No. 1 grades are limited at this time. Eastern shipments PRE-PAID. Write for details.



This lovely floribunda has already taken its place as a popular favorite. Lilibet's vigorous growth and beautiful coral pink blooms assure its continuous demand for many years to come. Lilibet has become a national favorite used in mass planting and hedges because it remains green and attractive long into the Fall.

A ROW for Robert V. Lindquist of HOWARDS of HEMET



1955 ALL-AMERICA ROSE WINNER



Here is the hybrid tea that is sure to become the most popular rose of the decade. Tiffany's AARS score nearly topped the highest score on record. Tiffany combines all of the most desirable characteristics demanded of a great rose. Tiffany's deep pink and golden yellow blooms are huge and it is not unusual to see stems 20" to 24" long. Named to honor Tiffany & Co., known the world over for unexcelled quality.

# 1955 BUYERS GUIDE FOR ALL-AMERICA ROSES

By Robert V. Lindquist

Last year our AARS booklet was so popular we are making a new and larger booklet available to all nurserymen to give to their customers. This booklet is available to all at actual printing cost. Write for details.

HOWARDS OF HEMET . HEMET, CALIFORNIA

- 66 - 61 - 82 - 40 12-87 - 62 82 87

99 

# AMERICAN NURSERYMAN

F. R. KILNER Editor and Publisher

KENNETH A. BRENT Managing Editor

#### Editorial

#### INFORMED BUYERS

The current conferences being held by the Federal Trade Commission with members of the nursery industry in regard to setting up fair trade practice rules in this field have shown general support for the undertaking. Some persons, of course, do not like to add to the multiplicity of laws and regulations that already affect business, while others differ with the definitions and phraseology employed in some of the rules. But the results to be gained are expected to do much more than offset any possible disadvantages.

Three results may be expected to come from the adoption of fair trade practice rules affecting plant dealers and shippers. It will serve as an endorsement of the responsible and reputable firms which carry on the greatest part of the business in this field, year after year. It will warn those of somewhat less high standards, so that they will avoid infringement of the rules. It will make it easier to halt the operations of shysters, such as have recently played upon the public for several years before they were brought into a court of law, to be indicted and possibly convicted only after a lengthy trial, the marshaling of many witnesses and a considerable expenditure of time and money by those engaged or interested in the prosecution. The citation by the Federal Trade Commission of a firm found guilty of infringement of an industry's fair trade practice rules receives wide attention and would halt an irresponsible operator far sooner than the lengthy pursuit required by processes of law hitherto.

But the most important benefit to be derived from the adoption of fair trade practice rules by an industry is the fact that the public learns the definitions of quality products, and the reverse, which otherwise are plain only to the commercial element and possibly to the small group of informed buyers, called the advanced amateurs in the gardening field. The definitions and rules which are arrived at by an industry in coThe Mirror of the Trade

operation with the FTC are down in black and white, for reference and for quotation. As they are given widespread publicity through garden magazines, newspaper garden columns, trade and amateur organizations and individual efforts, the public cannot fail to become better informed on the merchandise that is bought, and the standards of grades and sizes and quality that are to be expected. An informed buyer is an alert buyer.

The intricacies of plant nomenclature, just as much as the trade's practices as to grade standards, will be recognized by gardeners as important to their success in buying what they want. If fair trade practice rules are set up in cooperation with the Federal Trade Commission, the public will learn more definitely about these phases of their garden purchases. And a well-informed buyer is a better buyer.

#### TAX REVISION

Of the legislation enacted by the Congress that recently adjourned, none affects so many citizens as the tax revision bill. Not only does it reduce the taxes to be paid by a great many persons and corporations next year, but it includes a thoroughgoing overhaul of income tax provisions that needed attention. The changes are too many to enumerate or even summarize broadly. Some of the important changes are in definitions and procedures. Every taxpayer should realize that his payments will be affected and, unless he employs an accountant or lawyer to prepare his return or to advise him in that regard, he should undertake to learn the changes that will, or can, affect his pocketbook.

Another act by the late Congress was the extension of social security coverage to a reported 10,000,000 additional persons, the greater portion being either farm operators or self-employed workers. Included will be many nurserymen and other persons engaged in horticultural pursuits.

Along with the increased unemployment compensation benefits voted by Congress, there will be an increase in the tax on many persons in 1955, because the two per cent paid each by the employee and his employer will be applied to the first \$4,200 of income, instead of the first \$3,600 of income as at present.

#### COVER PHOTOGRAPHS

On the cover of each issue of the American Nurseryman appears the picture of a woody ornamental plant that is recommended as among the select species for landscape planting. Some shrubs and trees, some of them fairly common, have not been represented because satisfactory photographs have not been available from the sources used.

Some readers may have such photographs, or specimen plants of which excellent photographs may be made. It should be noted that each photograph should show the complete plants—not just a branch or twig of flowers—and should show a specimen typical of the species.

For each photograph used the American Nurseryman will pay liberally. Any not found satisfactory will be promptly returned.

Please write the editor if you can supply photographs of the subjects below, or can have them made—or send along the prints for prompt inspection. Here are the subjects particularly desired:

Acanthopanax sieboldianus (Aralia pentaphylla) Actinidia arguta Aronia arbutifolia brilliantissima Callicarpa dichotoma (purpurea) Clematis tangutica Clematis texensis Cornus sanguinea Cotoneaster dammeri radicans Cotoneaster dielsiana Cotoneaster himalaycus Cotoneaster salicifolia floccosa Crataegus coccinea Crataegus cordata Euonymus nana Exochorda giraldi wilsoni Hypericum kalmianum Hypericum patulum henryi Ilex pernyi veitchi Juniperus chinensis keteleeri Juniperus communis saxatilis (montana) Juniperus horizontalis Bar Harbor uniperus horizontalis procumbens funiperus sabina prostrata hilli uniperus scopulorum prostrata Juniperus virginiana burki Juniperus virginiana globosa Kalmia latifolia myrtifolia Ligustrum amurense Lonicera morrowi Lonicera spinosa alberti Lonicera tellmanniana Mahonia repens Picea pungens moerheimi Pinus koraiensis Pyracantha coccinea pauciflora Rhamnus davurica Rhus aromatica (canadensis) Spiraea bumalda Anthony Waterer Spiraea bumalda froebeli Taxus cuspidata columnaris Taxus cuspidata intermedia Taxus media andersoni Taxus media wellesleyana Tsuga canadensis atrovirens Tsuga canadensis globosa Tsuga canadensis nana

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Personalities at the Texas convention. Left to right, Clark Kidd, Tyler, holding Arp trophy for meritorious service to the nursery industry; Joanne Miller, queen of the Texas rose festival; L. A. (Slick) Dean, Tyler, president of the Texas Rose Festival Association; Mrs. Frank Cornelius, and Frank Cornelius, Houston, retiring president of the Texas Association of Nurserymen, holding the past president's plaque.

# **Expanding Texas Group Meets**

By George Fisher

The Texas Association of Nurserymen held its second "vacation convention" August 23 to 25 in the Hotel Texas, Fort Worth, repeating the idea of featuring events for the whole family which made the 1953 convention, at Mineral Wells, outstanding. As evidence of the broad family participation, the Junior TANers was organized, with 46 charter members, and wives of the nurserymen enjoyed a busy social program during the three convention days. Total registration was 485.

Unique features of the 1954 meeting included the address of welcome by President J. B. (Bob) Baker, Jr., of the American Association of Nurserymen, to his home town of Fort Worth, and his constant and helpful presence and gracious hospitality throughout the convention.

New officers were elected on the third day of the convention and will carry on the work of the T. A. N. for its second year since it became of age a year ago, when the association was incorporated and employed a full-time executive secretary. Elected were Gene Howard, Howard's Montopolis Nursery, Austin, president; H. Durward Thompson, Corpus Christi, first vice-president, and R. C. Aldridge, Aldridge Nursery, Von Ormy, second vice-president.

Among the most significant busi-

ness conducted by the convention was approval of a code of ethics and of bylaws and constitution revisions. The code of ethics frames, for the guidance of T. A. N. members, a pattern of conduct embodying the highest ideals of business practice. Among the constitution revisions is a provision in article 2 which provides that membership in the association shall consist of four categories -regular, affiliate, associate and honorary. Article 8 provides for dues payment by the active membership on the basis of volume of business done by an individual during a member's previous fiscal year; by associate members at the rate of \$35 per year. and by affiliate members at \$10 per year. No dues will be charged to honorary members.

#### Opening Session

The opening session of the T. A. N. convention was called to order by President Frank S. Cornelius on Monday afternoon, August 23, in the Keystone room, and an invocation was given by Oscar S. Gray, Jr., O. S. Gray Nursery, Arlington.

Mr. Baker then welcomed the nurserymen, prefacing his remarks by commending the hosts of the convention, members of the Tarrant county nurserymen's association, for their untiring efforts in preparation for the convention. Mr. Baker spoke of the excellent industrial, cultural and recreational facilities of Fort Worth, pointing out points of particular interest in the city for the attending nurserymen to see.

The value of a strong trade association was stressed by T. A. N. President Cornelius, who, at this time, made his report to the assembly. He commended his fellow officers, the directors and the committees who shared the administrative responsibilities during the past year.

Bill Collins, the executive secretary, then spoke on some of the accomplishments of the T. A. N. during this period. The group now has more than 300 members, 80 new applicants having been voted in at the board of directors' meeting preceding the convention. He mentioned the informational bulletin program which has been initiated. An average of one bulletin a month has been sent to the members.

The main speaker of the afternoon was Jim Roberts, of the Dallas office of the United States Chamber of Commerce, whose address was entitled "Report to Business." Mr. Roberts presented highly informative data on current business conditions. A poll taken among association members showed the nursery business to be as good or better than it was a year ago.

The assembly was then turned over

to John White, state commissioner of agriculture, who discussed the nursery inspection laws and procedure. He advised the nurserymen that the state department of agriculture will henceforth have 25 to 30 inspectors in the field, including 15 or 16 full-time inspectors, and that when inspections are made, the certificates of inspection will be issued on the spot, a means of avoiding costly delays to nurserymen.

# Report on Research and Education

A report on work of far-reaching importance was delivered by Ralph Ellis Gunn, landscape architect, Houston, who talked on the achievements of the committee on research and education. Mr. Gunn spoke first on the short course held May 31 to June 2. This short course, the most successful of all sessions to date in both attendance and finances, was planned by the committee. After the short course, the committee sent questionnaires to T. A. N. members regarding their reactions to the program and the way it was conducted. Mr. Gunn presented a tabulation of the questionnaire which indicated that an overwhelming majority of the nurserymen liked divided sessions of retailers, growers and wholesalers, and that, of the various parts of the program, those devoted to propagation, selling and sales promotion, consumer research and retail operating costs were most popular. questionnaire asked for suggestions for future programs, and the responses indicated a desire for information on insects and controls, for wider use of college staff members on the programs and for the provision of more mimeographed mate-

The research and education committee, in cooperation with the staff of Texas Agricultural and Mechanical College, College Station, Tex., will soon initiate a quarterly bulletin, Mr. Gunn announced. The bulletin, containing technical information, will be prepared by the college staff and will be distributed to all members of the association by the education committee.

#### **Personnel Training**

Prof. A. F. DeWerth, head of the department of floriculture and landscape design, Texas A. and M. College, then addressed the group on "Training Personnel for the Nursery Industry." Labor, Professor De-Werth stated, is the greatest cost factor in the nursery business. The greatest need in the industry today is for well-trained younger men.

Professor DeWerth explained that

the nursery industry is experiencing an acute shortage of young employees because it does not endeavor to make the nursery business attractive to them either in terms of wages, working conditions or chances for advancement. Salaries in general are too low and advancement too slow, so that young men are being lured to other professions.

The speaker advocated 2-year specialized training for young men who show aptitude, and he told the assemblage that the nurserymen themselves must pick apt young men and see that they obtain the necessary training in the state schools which are initiating training programs along the lines set forth by the American Association of Nurserymen.

In conclusion, Professor DeWerth stated that Texas A. and M. College is now rated among the top five state schools in teaching staff, laboratory and field facilities to train young men for the nursery industry.

# Nurserymen's Meeting Televised

The first part of the afternoon session was photographed by cameras from television station WBAP-TV, Fort Worth, for later presentation on "Texas in Review." The Fort Worth Star Telegram gave the convention excellent publicity, publishing daily photographs and stories on A. A. N. and T. A. N. officials.

The first afternoon's session ended at 4:30 p. m. to allow commercial exhibitors to prepare their trade exhibits for the first of two public showings. A new policy on trade exhibits was put into practice at this convention. The commercial exhibits. which were staged in the Hotel Texas exhibit hall, directly across the street from the hotel, were closed during all general sessions to allow the exhibitors to attend the meetings and to promote general attendance.

Also, from 5 to 7 p. m. on the first day and 4 to 7 p. m. on the second day the exhibits were open to the general public as an educational feature to acquaint the public better with nursery products and services. During the public showings the Fort Worth nurserymen and landscape contractors served as consultants and guides. All wholesale price lists were removed, and no sales of any kind were made. The exhibits were open to the nurserymen during the rest of the convention, and adequate time was provided for looking and trading outside of general business sessions. Jud Germany, Germany's Nursery, Fort Worth, was chairman of the exhibits.

[Continued on page 65]

# Owen Jailed, Fined \$17,000

James W. Owen, operator of what was termed the nation's biggest mail-order nursery business, on August 25 was fined \$17,000 and sentenced to a year in jail for using the mails to defraud, it was reported by national wire services.

Federal Judge Charles G. Briggle, sitting at Springfield, Ill., denied Owen's motion for probation, declaring the "overriding consideration is the public welfare, and society generally demands more than a fine for this man."

Owen's fine was \$1,000 and costs on each of the 17 counts on which he was convicted.

Defense attorney Arthur M. Fitzgerald had moved for probation because of the Bloomington, Ill., nurseryman's "close-knit" family ties with his wife and three children.

Before the court announced its decision, Assistant United States Attorney Marks Alexander argued for a severe penalty, saying that this was needed to maintain confidence of the people in their governmentand to protect free enterprise.

He spoke of 2,500 letters of complaint received by the government from dissatisfied Owen customers. Through them, he said, ran the theme of questioning that the Post Office Department and other government agencies would tolerate the operation Owen was carrying on.

The indictment charged Owen bilked customers by misrepresenting his stock in ads, sending poor-grade plants and trees to buyers and trying to stall off dissatisfied customers who sought refunds.

Prosecutors contended Owen sent many buyers dead or dying stock and the buyers could not get their money back.

Judge Briggle heard the case without a jury. He took it under advisement July 12, after 23 days of testimony from about 200 persons.

District Attorney John B. Stoddart, Jr., said that in 1952 alone Owen grossed \$3,500,000.

After the sentencing the defense attorney moved for a new trial, and this motion was pending as this issue went to press. He asked for a 60-day stay of execution to allow Owen to pay the fine and "clean up business matters." The judge said it would be granted.

Owen was released on \$3,000 bond previously posted.

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# **Optimism Keynotes Washington Meet**

By M. Blake Smith

Gov. Arthur B. Langlie, of Washington, gave an enthusiastic greeting to nurserymen attending the summer convention of the Washton State Nurserymen's Association. held August 16 and 17 in the Benjamin Franklin hotel, Seattle, and followed it with an inspiring address which was most optimistic about the future of the nursery industry in the state. Governor Langlie pointed out that the average population increase in the state is and has for some years been 60,000 persons per annum, a figure which, it is believed, will be augmented in the future, when natural gas becomes available in the state. Briefly summarized, the points of Governor Langlie's address were these: That new residents need new homes and new homes need landscaping; nurserymen add to the beauty of homes by landscaping them, and this in turn creates additional impetus for population increases, because the beautified homes create in visitors a desire to live in the state

Inspired by Governor Langlie's high appraisal of the worth and purpose of their work, the attending nurserymen then turned to business matters. First on the agenda was a joint meeting of the state association with chapter 28 of the American Association of Nurserymen, with reports of mutual interest to members

of both the chapter and state groups.

The annual election was held during the convention, and, as a result of the balloting, President W. M. Steward, Maple Valley; Vice-president Larry Krause, Krause Nursery, Spokane, and the secretary-treasurer, Mrs. Stanley Walters, Walters Nursery, Puyallup, were all reelected to their respective offices. John B. Strander was retained as editor of Balls & Burlaps. John Snyder and Harley Mays were elected to 3-year board memberships.

#### Address on Selling

President Steward introduced the first speaker, Fred C. Trullinger, president of the Portland Seed Co. Mr. Trullinger pointed out that, with the advent of the 5-day week, gardening has become one of the major American hobbies. If labor succeeds in securing a 4-day week, gardening's popularity will be still further expanded. As it is, he asked the nurserymen pointedly, "Are you getting your share of the business?"

Mr. Trullinger illustrated his points with several compelling diagrams, one of which was pie-shaped and divided into wedges of varying sizes. The right half of the pie represented the basic items of seeds and new plant materials which amount to nearly a billion dollars' worth of business annually in the United

States. The left half of the pie was divided into three wedges representing (1) garden hardware, (2) plant foods and soil conditioners and (3) sprays and dusts. Sales in garden hardware, Mr. Trullinger stated, amount to \$240 million annually; plant food and soil conditioner sales amount to \$290 million annually, and sales of sprays and dusts amount to \$200 million annually.

Having called attention to the enormous sales potential, Mr. Trullinger then discussed measures by which nurserymen could make certain of obtaining their share. He first noted that arrangement of stock in an orderly fashion leads to sales. He recommended self-service merchandising, with open shelves, as in supermarkets. Second, he observed that merchandise should be so arranged that one item suggests another.

As an example of good arrangement, Mr. Trullinger described the use of portable tables, used by one nursery he had visited, to promote sales of fertilizers, pruning shears and similar items out of doors. Near a display of azaleas, camellias and rhododendrons, the nursery had a portable table filled with acid-type fertilizers. A sign explained the advantages of using such fertilizers. Near a shrubbery display was a table of shears and also a selection



New officers and prominent members of the Washington State Nurserymen's Association at the recent meeting. Back row, left to right, Vic Mix, Seattle, named "Man of the Year"; Lenorassociation journal; John Snyder, Wenatchee, director; Larry Krause, Spokane, vice-president; W. M. Steward, Maple Valley, president, and Carl White, Walla Walla, director. Front row, left to right: Vic Mix, Seattle, named Man of the Year; Lenora G. Walters, Puyallup, secretary-treasurer; Winsor Bond, Yakima, director, and Harley Mays, Vancouver, director.

of books giving pruning directions. Once again, a sign was used to point out the need of these items in connection with shrubs.

The speaker reminded the group to keep the windows clean and to change displays often. "If possible," he recommended, "make your window displays tell a story. Put items in the window that go together."

As an example of the storytelling possible in a window display, he suggested placing two flats of soil in the window. One flat would contain the typical problem soil in the nurseryman's district, which customers would immediately recognize. The other flat would contain the same soil mixed with a soil conditioner and made friable. The flats should be properly labeled, and explanatory signs utilized.

Mr. Trullinger stated that following up sales, a matter which calls for careful record keeping, is a profitable venture in itself and also makes for excellent public relations. He suggested that two or three weeks after a sale of grass seeds to a customer, a nurseryman might call and ask how the new lawn is coming. If the customer replies, "It's coming up full of weeds," the nurseryman has an opportunity to explain why this is usually the case and what the customer should do about it.

#### **Teach Landscaping Classes**

After a coffee break, Harold T. Hopkins, Hopkins Nursery, Bothell, led a panel discussion on the 2-year educational program sponsored by nurserymen in the area encompassing Bothell, Kirkland, Redmond, Kenmore and other communities northeast of Seattle. This program consisted of classes in landscaping for homeowners, which were given without charge through the Bothell school district. Robert E. Tindall, Tindall's Evergreen Nursery; Paul Mortensen, Bonnybrook Nursery, and Ernie Humphrey, Far West Nursery, all of Bothell, were members of the panel.

The educational program itself operated as a panel, it was related, with a speaker first talking on the subject up for discussion. Panel members then asked the speaker questions in order to start audience participation, and shortly afterward class members usually began to take part freely in the discussions.

The educational program brought many benefits. Through the classes the participating nurserymen made new customers. These customers were interested in better material and were more willing than the average customer to pay higher prices for quality merchandise. The nurserymen found that the classes raised the standards of landscaping appreciation in their communities. It was also observed that pleasant relationships between nurserymen were strengthened by their mutual interest in the educational programs. In some cases, mutual trust and cooperation have replaced standoffishness and suspicion.

The nurserymen who taught the classes learned through teaching, not only about plant materials, but also about public relations. The participating nurserymen received good practice in public speaking and were invited to address other groups. Attention was focused on desirable plant material for the area.

Harold Hopkins then presented for consideration a suggested revision of the nurserymen's guarantee. A placard showing the existing guarantee and the suggested revisions was placed by the speakers' rostrum so that conventioners could examine it and consider the revisions at their leisure.

After luncheon, two panel discussions were featured. L. H. McGuire, Puget Sound Nursery, Tacoma, led the first discussion, on "What Is Expected of the Nurseryman?" Serving

with him on the panel were Cecil Solley, garden editor of the Seattle Times; Dr. John H. Hanley, garden editor of the Seattle Post-Intelligencer, and William Moshier, farm editor of the Seattle Times.

Dr. Hanley stated that customers expect a healthy plant free of pests and diseases, one with a good root system. He stated that customers also have a right to expect from nurserymen detailed information on growing and care of plants bought from them. Names of plants should be accurate.

William Moshier suggested that there are two basic types of customers in a nursery. The first is the plant fancier. He knows plants, knows what he wants. He buys specific material for a planned spot in his garden. He is usually fun to deal with because he can talk the nurseryman's lingo. The trouble is that there are not enough customers like him and his garden area is necessarily limited. A nurseryman can secure repeat business from him, Mr. Moshier continued, only by keeping one step ahead of him and whetting his appetite for new and rare specimen plants.

The second type of customer does not know what he wants. All he [Continued on page 89]

# **Nursery Opens Drive-In Division**



A drive-in division is the newest addition to Island Landscape Co., West Palm Beach, Fla. The firm has maintained a 60-acre nursery in the city limits of West Palm Beach since 1928 and over the years discovered that customers did not appreciate the effort that it took to pick out desired plants and shrubs which were scattered over the entire 60 acres. To give quicker and more efficient service, the firm decided to open a drive-in. The new division consists of a small, attractive office building, pictured above, constructed of used brick. A large kidney-shaped roof extends out in the front, under which a patio has been constructed. The sales lot is 100x150 feet and is entirely fenced in. Plants are offered in containers and assorted pots. The containers have been painted with green enamel to make them attractive. Other features of the shop are a circular drive and ample parking space; a demonstration garden to aid customers in selecting material suited for their particular needs, and stocking of a line of fertilizers, insecticides, outdoor furniture and other gardening needs and equipment. Merchandising is primarily by self-service. W. C. Cutler is general manager of the firm, which is owned by Mrs. E. Tinsley Halter, widow of the founder.

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# Southerners Meet at Jacksonville

Some 250 nurserymen from 15 southeastern states gathered Jacksonville, Fla., August 22 to 24 for the annual convention of the Southern Nurserymen's Association.

Although the weather was first hot and then rainy, the conventioners liked their meeting so much that they voted to have a winter trade session every year at Jacksonville. January 23 was set as the date for the 1955 conclave.

Conventions in the past have stressed social events as well as exchange of ideas on running a nursery, but the winter trade meeting will be held to buy and sell nursery stock.

Arthur N. Watson, of Monticello, Fla., now immediate past president, put it this way: "Florida is full of winter visitors, who might like to do a little business on the side." It is planned to arrange attractive exhibits, so that southern stock can be displayed to best advantage.

The summer convention will be continued. Members received an invitation from Asheville, N. C., to meet there next time, and they voted to accept.

# New Officers

New officers elected at the Tuesday morning session of the convention were Hoskins Shadow, Winchester, Tenn., president; George Sawada, Mobile, Ala., vice-president, and A. S. Gresham, Jr., Richmond, Va., secretary-treasurer. Mr. Shadow, who was vice-president during the past year, succeeds Arthur N. Watson, Monticello, Fla., and Mr. Gresham continues in his post.

Serving as members of the board will be Messrs. Watson, Shadow, Sawada and Gresham, and Jack Aichele, Charleston, S. C.; Aubrey Owen, Gay, Ga., and Steve Verhalen, Scottsville, Tex.

The group was divided for the first



Hoskins Shadow, Winchester, Tenn., seated, is the new president of the Southern Nurserymen's Association. George Sawada, Mobile, Ala., standing, left, is the organization's new vice-president, and A. S. Gresham, Jr., Richmond, Va., continues as secretary-treasurer.

time into four chapters: (1) West Virginia, Virginia, Maryland and North Carolina; (2) South Carolina, Georgia and Florida; (3) Kentucky, Tennessee and Alabama, and (4) Mississippi, Louisiana, Arkansas and

Resolutions adopted by the association included one calling for expansion of federal and state programs for control of insects, particularly the white-fringed beetle. The group joined the American Association of Nurserymen in opposing misleading advertising on the grounds that such practice injures the indus-

The convention opened Sunday evening with registration and a cocktail party in the Grand ballroom of the air-conditioned Roosevelt hotel, meeting headquarters. Business sessions were held in the Floridian room each morning, with Monday afternoon open and Tuesday afternoon spent in visiting local nurseries.

The big banquet and dance was Monday night, when guests heard Fuller Warren, former governor of Florida, invite them to move to Florida, where he said 22 million acres remained uncultivated. He also said that although he had removed Florida's cows from the highways, there still was a job of beautification to be done. Digging back into boyhood memories, he recalled how he had worked in his father's

half-acre nursery, at Blountstown, Fla., "budding orange stock on trifoliata."

In a talk Tuesday morning the nurserymen heard Herman S. Mayeux, of Florida Agricultural Supply Co., describe the latest weed-killing chemicals.

Mr. Mayeux advised that each individual try out the chemicals on small projects, learning just what he can do successfully before attacking weeds in large plantings.

For burning up rough weeds where there are no cultivalted plants to be avoided, he advised a contact weed killer. It produces no soil reaction nor contamination. A quart of such an herbicide mixed with 15 gallons of No. 2 Diesel fuel makes a suitable spray. Thirty-five to 70 gallons are used to spray an acre, he said.

Grasses can be attacked with a systemic herbicide, such as maleic hydrazide, using 10 pounds to the acre for suppression of growth and 50 pounds to the acre to kill the grass out entirely.

Such pests as nut grass, wandering jew and wild artichoke yield to sprinkler can application of 2, 4-D and 2, 4, 5-T. The speaker said he had tried it among camellias and found that small amounts on the foliage caused no injury.

He showed films of nursery stock

[Continued on page 44]



Among those attending the summer meeting of the Ohio Nurserymen's Association were, left to right, George Gens, Elyria, O. N. A. president; Howard Kyle, Tipp City, O. N. A. vice-president; Roger Aukeman, South Vienna, O. N. A. secretary-treasurer; Frank Turner, Springfield, O. N. A. convention chairman, and Charles Kohankie, Painesville, summer meeting chairman for the Lake County Nurserymen's Association.

# **Ohioans Enjoy 2-Day Outing**

By Marie Brandstaetter

The Lake County Nurserymen's Association acted as host to approximately 150 nurserymen and their families from various parts of Ohio, at the summer meeting of the Ohio Nurserymen's Association, held August 18 and 19, at Mentor, O.

Plans for this affair were made by Charles Kohankie, of Painesville, O., general chairman, and K. B. Fisher, of Mentor, who was in charge of reservations. They were assisted by William D. Cole, David Dugan, Robert Kallay, Joseph Kern and William Youmans.

Headquarters were set up at Mentor Mansion hotel, where guests registered beginning Wednesday afternoon, August 18. Fortunately, the weather was pleasant, heavy rains a few days before having broken the month-long drought and cooled the atmosphere considerably. Those who came early found a congenial group on hand and spent an enjoyable afternoon visiting with old friends and meeting new members. An executive committee meeting of the Ohio Nurserymen's Association was held later in the afternoon.

In the evening, before dinner was served, K. B. Fisher, the new president of the Lake County association, introduced Mayor Eleanor B. Garfield, of Mentor, who welcomed the guests. Mayor Garfield commented on the pride that Mentor has taken in being in the heart of the section in which the nursery industry plays such an important role. Because of the world-renown Lake county has gained, it can well claim to be the "Garden Spot of America." In clos-

ing, Mayor Garfield made the comparison between industries in larger cities, which deal in material things they manufacture, and the nursery industry, which deals in spiritual things

George Gens, Ohio Nurserymen's Association president, was present, as were A. W. Marion, director of natural resources, and A. L. Sorensen, director of the division of agriculture, state of Ohio, and Dr. L. C. Chadwick, Ohio State University. Other officers of the Ohio association on hand were Howard Kyle, vicepresident; Roger C. Aukeman, secretary-treasurer, and Frank Turner, convention chairman. A ham dinner was served to about 200 persons and afterward the group enjoyed square dancing in the ballroom of the hotel. Bill Leedale, recreation director of Painesville, was the caller, and those who were not familiar with squaredancing terms and steps found his instructions helpful and were able to join in the fun. Beautiful corsages of roses were presented to the wives of officers and to Mayor Garfield

## Rain Welcome

Thursday morning, August 19, dawned with another rainstorm which, although not conducive to an outdoor fish fry at noon, was nonetheless most welcome to nurserymen in this drought-stricken area. However, by noon the weather had cleared and about 175 persons gathered at Mentor Beach park to enjoy the fresh-caught Lake Erie fish which were being prepared. Salad

and trimmings to make the meal complete were furnished by a local church organization.

The rest of the afternoon was spent in swimming, light sports or just relaxing in the sun. Of course, the wives and daughters took advantage of this opportunity to improve their suntans. The committee thought this outing would find particular favor with those who do not live near a lake and do not have the opportunity to enjoy swimming and sunbathing.

In the evening the group met again for the grand finale of their 2-day gathering. The spacious lawn and garden at Grady's Inn, at Mentor, provided a perfect setting in which the guests could visit and relax before dinner. At 7, chicken dinner was served to about 200 persons and afterward Lew Peck's orchestra played for dancing.

Floral decorations for the tables were furnished by the nurserymen and rose growers of the Lake County association and vases of roses were placed in each of the motel rooms occupied by the conventioners. In addition each lady at the farewell dinner received a rosebud. Havel's Flowers, Bleil's Garden Center and Forrest Pinney, all of Mentor, were in charge of flower arrangements and corsages. Table favors were made by the secretary, Marie Brandstaetter.

#### R. H. S. CELEBRATES

The sesquicentennial celebrations of the Royal Horticultural Society this year have been impressive, as would be expected of this organization, which has grown to a membership of more than 45,000 from a group of seven men who met in a London bookshop to found the society in 1804. Its exhibitions, publications, library, trial gardens at Wislev and services to horticulture in various channels have given the society pre-eminence among horticul-tural bodies of the world, many of whom sent messages or representatives to convey congratulations at a recent banquet which was a highlight of the celebrations. The gardens at Wisley have gradually grown in size and interest through a long period of years until they include over 200 acres in ornamental plants, fruits and vegetables. Over 18,000 queries a year from the society's members alone are answered by the technical staff at Wisley. The periodicals and books published by the society are outstanding in their contributions to horticultural knowledge.

# Warn Propagators to Watch For Sex Reversal in Taxus

By Ray Keen and L. C. Chadwick

Nurserymen and others who propagate the various varieties of yew should endeavor to avoid propagating the occasional twigs of the opposite sex which occur on some plants. This may seem unimportant at first, but the yew is normally dioecious, and a change of sex is as great a mutation as a change of fo-

liage or habit of growth. These sex reverses have been observed over a considerable period of time. The original Dovaston yew, a male tree, had one female branch, according to John Dovaston, son of the man who planted the tree. T. D. Hatfield reported whole seedling plants as well as single branches which reversed their sex. A similar reversal is recorded for one plant in a mixed lot of T. media hicksi at Wooster, O. John Vermeulen, who introduced the heavy-fruiting Kelsey yew, states that a strongly fastigiate or narrow, upright male mutant is known to sport from this variety occasionally. This, incidentally, is one of the few records of male mutation, which probably occurs as often as the reverse, but the male flowers, figure 1 (top), are much less conspicuous than the seed with its

bright red aril. In the Secrest Arboretum of the Ohio agricultural experiment station, Wooster, O., is a large male

plant of the dwarf Japanese yew, Taxus cuspidata nana, with one female branch. A smaller plant of the same variety, in the Living Herbarium of Taxus there, has two female branches. Four other plants from the same source are entirely male. Plants of either sex are in the trade under this name; however, of five plants received from the same nurseryman under the name T. c. nana femina, three are male plants. Older plants of female dwarf Japanese yew seem to lack the foliage density of the male plants. The two branches in figure 2 are from a young plant. Similar female branches occur on one of five male plants of T. c. intermedia.

Female twigs or branches were observed on only one plant out of five in the following hybrid, or T. media, male clones: T. Media hatfieldi No. 26, T. m. wellesleyana, T. media No. B and a half-and-half branch illustrated in figure 3 on T. m. browni, Brown's Anglojap yew. This female form of browni has been propagated in the trade, but it should be discarded, or at least not sold as browni, because it is inferior to the male and can be readily recognized from some distance in a sheared hedge. The original plant of this clone is an excurrent conical tree on the Hunnewell estate, at



female flowers of yew at time of pollination, March or April.

Wellesley, Mass. It is a seedling grown by T. D. Hatfield and named in honor of Mr. Brown, of the Cottage Gardens, on Long Island.

Taxus canadensis is usually monoecious, having flowers of both sexes on the same plant and usually on the same twig.

The following clones have been found to be female wherever they have been growing:

## Taxus baccata

- T. b. adpressa T. b. aurea
- T. b. elegantissima T. b. expansa
- T. b. fructo-luteo
- T. b. repanda
- T. b. washingtoni

#### Taxus media

- T. m. cliftoni
- T. m. hicksi #1
- T. m. kelsevi

#### T. m. vermeuleni T. m. wardi

#### Taxus cuspidata T. c. densa

- T. c. thayerae

The following clones are recognized as being male:

#### Taxus baccata

- T. b. erecta T. b. dovastoni
- T. b. glauca T. b. nigra

- Taxus media
  - Γ. m. browni
  - T. m. hatfieldi
  - T. m. hicksi #2 T. m. wellesleyana

# Taxus cuspidata

- T. c. protrata
- T. c. stovekeni
- T. c. adamsi The names of other varieties and



Fig. 2. A male twig (left) and a female twig (right) from a plant of Taxus cuspidata nana, growing in the Living Herbarium of Taxus, at Wooster, O. Though somewhat rare, such sex reversals explain some of the differences in yew varieties as handled by different nurserymen.



Fig. 3. Twig of Taxus media browni bearing male flowers on the left and seeds and female flowers on the right.

clones will be added to the above lists as the sex of the true types is discovered. Those plants grown from seed or propagated from mixed seedlings, such as Taxus cuspidata, T. media and T. hunnewelliana, cannot be considered as clones and will continue in the trade in both sexes.

The authors are interested in learning of old plants of species and varieties of yew and of any new types. Observations of others on the sex of the different varieties of this group would also be of interest.

# NEW YORK BOTANIC GARDEN EXPANDS PROGRAM

The educational program of the New York Botanical Garden, Bronx park, New York city, has been expanded to provide afternoon as well as evening sessions, according to a recent announcement. New subjects have been added and established courses revised.

The 1954-55 educational program offers stimulating courses for students of plant life, for homeowners who wish to landscape their properties and for amateur and professional gardeners. Students who complete the required work in the 2-year courses are awarded certificates.

Courses will include such subjects as practical gardening, home landscaping, landscape and flower painting for amateurs, botany, mushroom identification and nature study for teachers.

THE annual outing of the Horticulture Club of Boston was held at East Boxford, Mass., recently,

# First Alabama Course

By Thomas M. Eden, Jr.

An extremely favorable reaction was noted to the first short course for Alabama nurserymen, sponsored by the Alabama Nurserymen's Association and the horticulture department of Alabama Polytechnic Institute and held at Auburn, Ala., August 12 to 14. The enthusiasm of those who attended the course will probably guarantee its repetition next year.

Speakers on the program represented the Alabama Polytechnic Institute and the Alabama experiment

Dr. W. G. Eden, professor of entomology, started off the "school" with an interesting talk on the uses and limitations of insecticides in nursery work, mentioning the limitations and characteristics of a number of widely used insecticides.

Among the newer and lesser-known products, Dr. Eden mentioned Diazinon, a new phosphate insecticide which has given excellent control of house flies and shows promise of being effective against a number of insects. He also mentioned Metacide, a combination of Parathion and its dimethyl homologue in the proportion of 1 to 4. This combination was developed in an effort to find a less toxic mixture than Parathion itself.

Wayne Arthur, assistant in entomology, continued the discussion of insects and their control. He told how insects of most types and groups have external characteristics from which field identification can be made with reasonable certainty. Identification of the beneficial as well as the destructive insects is important. It may be difficult to find beneficial insects preying upon destructive ones, but they play an important part in the biological control of harmful pests. Hence, one should be able to recognize insect friends as well as insect enemies.

Beneficial insects are either predators or parasites. Predaceous insects feed upon other insects, devouring them at a single meal. Parasitic insects lay their eggs on or in the host insect and the larvae feed and develop within the host, usually killing it. Among the most common predaceous insects are the ladybird beetles, lace wing flies or aphis lions and syrphid fly larvae.

One of Mr. Arthur's most important points was his emphasis on thorough coverage of infested plants with a spray in order to control effectively insect damage to ornamental plants. It is also important, he stated, to time the insecticidal application to coincide with emergence of the insects and to observe the cautions listed by the manufacturer before using the organic insecticides.

# Weed Control Research

Dr. Ray Self, plant pathologist, and V. S. Searcy, assistant agrono-mist, talked on weed control research on ornamentals. They said that the principle of chemical weed control in the field is to kill all of the young weeds and grass in a narrow band of row and then not plow any more seeds into this band. By leaving the row alone, those undisturbed seeds an inch or so below the surface do not readily germinate. Therefore, after the first few applications the time interval between treatments can be lengthened. The type of weed killer used must be toxic to young weeds and grass, yet not be toxic to the bark or roots of the ornamental

Preliminary trials on weed control in nursery beds indicated that potassium cyanate, Good-Rite N.I.X., and Alanap-1 at rates necessary for weed control are too toxic to the ornamental plants. Chloro IPC was somewhat more promising, but it was also slightly toxic. These weed killers as well as Crag Herbicide 1 are residual-type materials and may not react the same on different soil types.

Weed control has been obtained with both 10 gallons of cotton herbicidal oil and 10 pounds of potassium cyanate per acre per application. Under one set of conditions, weaknesses of both materials have been found and further work is needed to determine the best way to use these materials and the species on which they can be used safely. Several other herbicides also show promise but many details must be worked out before recommendations can be made.

A fine time was had by everyone at the social given at the conclusion of the first day, at the Chicken House, Opelika, Ala., by T. C. King, King's Nursery, Auburn. The food was delicious and the whole evening was thoroughly enjoyed by all.

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gardeners seemed to be anxious for another day of school because Dr. James Ferry, associate professor of botany, had many questions to answer on his talk, "Environmental Factors Affecting Plant Growth." Dr. Ferry stated that the correct interpretation of all activities of plants requires that each activity be carefully analyzed on the basis of cause and effect. A few fundamental facts should be put to work in explaining some problems concerned with the growth of plants.

First, what a plant is and what it does depends chiefly upon two things, namely, heredity and environment, conditions within and outside the plant which influence the plant's activity.

Second, although plants do not have brains, they are definitely living, dynamic entities capable of many remarkable processes.

The third fact which should be recognized is that only plants which contain chlorophyll can make their own food; that plants do not obtain their food from the air or soil or water, but rather plants obtain minerals and carbon dioxide and water from the environment and these are combined within the plant in the making of food.

The roots and underground stems of troublesome weeds, such as dandelion and thistle, will die of starvation if the green tops are removed frequently and immediately after they begin to develop, or if they are densely shaded by another plant such as alfalfa. When the green tops are removed, photosynthesis (food manufacture) ceases. The roots are therefore cut off from food because the roots are dependent upon the green tops for food and cannot obtain food from the soil or air or water.

Many persons remove the leaves from cuttings. It has been shown that the new roots will appear sooner, be more abundant and grow more rapidly if some of the leaves which are capable of staying turgid are not removed.

#### Greenhouse Management Discussed

Next on the program was a talk by Dr. Tok Furuta, who discussed the fundamentals of greenhouse management. Dr. Furuta brought out that management of the greenhouse begins before the greenhouse is built. If the site is carefully selected and the building well constructed, the problems one will encounter will be greatly decreased. The cheapest initial investment usu-

[Continued on page 82]



At the Iowa Nurserymen's Association summer meeting Arnold Webster (seated on tractor) explains features of narrow-gauge cultivator to Clyde Heard, Don Moffet, Bill Jordan and Leroy Meyers.

# **Iowans Tour Nurseries**

By Dean Platt

At the annual summer meeting of the Iowa Nurserymen's Association, held August 25 and 26 at Waterloo, Ia., a tour of nearby nurseries proved to be the program highlight. More than 80 nurserymen went on the tour.

During the visit to Meyers Nursery, Waterloo, Ia., Charles Meyers displayed a dwarf Spiraea vanhouttei, which is 11 years old and only two and one-half feet tall. This plant aroused much interest because of its dwarf habit of growth and the extreme density of both its branching and foliage. Mr. Meyers told the group that he had discovered this variety in a group of seedlings 15 years ago. At the time the parent plant was 4 or 5 years old and was slightly more than two feet tall. In an effort to verify his hopes regarding this plant, Mr. Meyers has since propagated 200; each has retained the dwarf habit and desirable characteristics of the parent. The blooms are a little larger and the individual florets seem to be a little larger than those of the regular Spiraea vanhouttei. Mr. Meyers is planning to secure the necessary patent rights and will, within the next few years, attempt to offer his discovery to the trade.

Another of the nurseries visited was Westphal Nurseries, Cedar Falls, now owned by Bill Jordan. Here the touring nurserymen were shown a most excellent basement storage unit for the retail nursery, where a wide assortment of shrubs, trees and flowers can be stored without damage by cold winter weather or warm spring days.

At Kuehn's Nursery, Cedar Falls, the nurserymen were shown an old tractor, which had been elevated to afford a 4-foot clearance. This conversion made an efficient and most worth-while piece of equipment for digging operations in the small nursery. The nurserymen were also shown a narrow-gauge cultivator tractor 28 inches in width, which could not only be used to advantage for cultivating narrow rows, but could also be ridden.

At Platt's Nursery, Waterloo, the nurserymen examined a plot of Meyers Z-52 Zoysia japonica and were greatly impressed by its rapid development. In slightly more than two months' time, plugs set in rows three feet apart and spaced at 1foot intervals had almost grown together. Dean Platt explained that, although the growth beneath the irrigation system was considerably more rapid than that observed in rows not reached by water, all parts of the planting did remain green throughout the extremely hot summer experienced this season.

[Continued on page 74]

# **Biggest Maryland Meeting**

By E. Sam Hemming

Over 300 nurserymen, wives, children and friends attended the summer meeting of the Maryland Nurserymen's Association, held August 19, at Westminster. Westminster Nurseries and Carroll Gardens were hosts to the largest Maryland meeting ever held.

The members met and registered at the new offices of the Westminster Nurseries, located on Highway 140, where the three Stoner brothers, Harold, Willard and Dave, did the welcoming. The new brick office containing reception room and individual offices is located on a rise easily seen from the highway and fronting the main nursery property. It is nicely landscaped and affords ample parking space for cars of visitors.

## **Nursery Tours**

As is the usual custom, the association's summer meeting was devoted to fellowship and visiting, there being no business transacted. Five large buses were made available for transporting the members over the two nurseries. The morning tour was devoted to Carroll Gardens. Patsy Donofrio and his son John showed the nurserymen over his Baltimore boulevard property and the home office garden and grounds. Carroll Gardens is now one of the country's leading mail-order houses in perennials. The nursery had a fine stand of young perennials, most of them lined out this spring and summer. The plants, in spite of the serious drought, were thriving because of the excellent care they were receiving.

The members next visited the home office, gardens, greenhouses and packing shed. Near the office is a fine display garden, which was colorful even in mid-August. Attracting particular attention were hibiscus and a new verbena, Flame, that is hardy for the Maryland area. Adjoining the display garden is an attractive rock garden with a water lily pool.

The buses then took the conventioners to the Westminster Riding Club, where a delicious buffet luncheon was served with the three Mesdames Stoner and Mrs. John Donofrio acting as hostesses. After the luncheon President Carl Orndorff made a few remarks of welcome and thanked the Stoners and

the Donofrios for their hospitality. He then called on Dr. George Langford, who acted as toastmaster and in turn introduced visiting nurserymen from other states and local notable guests. He introduced Dr. T. B. Symons, long time friend of Maryland nurserymen and now president protem of the University of Maryland, who commented on the growth of the association and gave some words of friendly advice.

After the luncheon the group was taken by buses back to the Westminster Nurseries for a tour of their 400 to 500 acres of nursery stock. The ladies and children were invited to spend the afternoon at Dan Stoner's new home and swimming pool, a welcome haven on the hot afternoon.

The Stoners have made fine progress in their program of expansion since the war, having built their new office and propagated and lined out acres of evergreens and flowering shrubs. They have about given up their landscape business, devoting nearly all their energies to the wholesale end.

The idea of touring the nursery by bus was a novel one, and it must be admitted that the driving of those large highway buses over nursery roads and around right angle turns was a novel experience both for the nurserymen and for the drivers.

During the drive through the nursery, which is located on rolling land on each side of Highway 140. the nurserymen saw many blocks of yew, arborvitae, spruce and broadleaved evergreens well cultivated and in fine condition in spite of the dry weather. At the greenhouse and frame area were seen fine beds of azaleas, rhododendrons and quantities of cuttings and potted liners. While the nurserymen were at the greenhouses the hot afternoon was relieved by a brief but fairly severe thunderstorm, the rain from which was welcome to all the nursery operators. On the way home traffic was blocked at Westminster by a number of trees that had blown down.

In the evening the members and guests who could stay were entertained at a barbecue and dance at the Westminster Riding Club.

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# **Educational New York Meet**

By A. M. S. Pridham

A well-attended meeting of the New York State Nurserymen's Association took place August 25 and 26, the first day at Cornell University, Ithaca, N. Y., and the second day at New York state agricultural experiment station, Geneva. Attendance exceeded 100 persons, including many visitors from nearby eastern states. Among the visitors was Richard P. White, executive secretary of the American Association of Nurserymen.

The morning session began actively with a tour formed by Dr. A. M. S. Pridham, professor of nursery management, Cornell. The group visited the new agricultural library, in which Bailey Hortorium is housed, and viewed other facilities of the new building. Apparatus called a heliodon, designed by Prof. F. W. Edmonson, Jr., Cornell college of architecture, was demonstrated. By means of a movable spotlight, it indicates the sun's position at any hour of the day during the year. This makes possible rapid and graphic illustration of shadows from buildings or from trees and enables planning of maximum climate control as related to the sun's position at critical times.

# Mist Propagation Research

Charles E. Hess, a graduate student and a recent recipient of the Commercial Enterprises of Newark, N. Y., Inc., fellowship, explained why mist technique is more successful than the commercial sweatbox method of rooting cuttings. He stated that experiments have resulted in 92 per cent rooting of pink dogwood cuttings with the mist method, as compared with 60 per cent rooting with the standard sweatbox method.

He told the group that research is based upon the study of how the factors of water, temperature and light differ under the two methods of rooting and how the cuttings respond to these differences. One of the most apparent differences between the mist technique and the sweatbox method of rooting cuttings

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Using Polyethylene

# Handling and Packaging **Perennials For Shipment**

By John P. Mahlstede

Iowa State College

It is a pleasant experience for a prospective customer to sit down and page through a nursery catalog or meander through a nursery salesyard. In so doing it usually is the perennial section, with its wide variety of types and colors, that catches his eye. Because of the comparatively low cost of this line, perennials are often included in a first contact

Therefore, for the nurseryman who handles a complete line of stock, either on a local retail basis or through mail-order catalogs, the perennial phase of the business is most important. Because the nurseryman is interested in future sales, he is most concerned with seeing that the prospective customer, even though he may only be buying a few plants to put out around a small home, is supplied with well-grown stock which has been properly handled and transported to him without undue loss of quality.

The problem of handling and packaging nursery stock of the perennial type begins in the fall, at the time of digging. Until recently perennial material which was to be distributed to markets in the spring of the year has been held in heavily mulched coldframes, or in heelingin boxes containing moist peat, sand or sphagnum moss and located in common storage units. By following this procedure the operator could ship early in the season without risking the hazards of digging during a time when the ground may be frozen

However, this general method of handling stock often resulted in serious losses which were brought about by rot-causing organisms or sudden temperature changes. In addition, if plants being stored in outdoor coldframes were allowed to remain in the beds for any extended period of time, normal growth soon developed, which added to the difficulty of handling and packaging.

## Refrigerated Storage

The recent application of the freezing storage as a method of holding perennials has greatly improved handling and packaging techniques for this type of plant material. The general procedure as described by Ted Sjulin, Inter-State Nurseries, Hamburg, Ia., is a good example of the ingenuity and concern that nurserymen exhibit while continually improving the methods of handling and general quality of plant materials

reaching the public. With the use of this procedure, the perennial material is dug in the fall of the year, after growth has ceased and the plant has become dormant. If an extensive wet spell prohibits the lifting of plants during a period when the soil is in good condition, the material should be spread out on tables or tarps in a common storage cellar in order to allow leaf and root surfaces to lose excess moisture. The perennials are then packed in common orange crates, which have been previously lined with waxed or nursery paper. As the two longitudinal layers are built up from the bottom of the crate, with the roots protruding toward the center of the box, slightly damp packing is placed around the crowns and roots. After the crate has become filled, the lining is doubled over the top of the box, the unit wired shut and immediately placed in storage.

An important point at this stage should be noted, namely that immediately after the crate has been placed in storage, the temperature should be lowered to around 25 to 26 degrees Fahrenheit in order to remove the field heat as quickly as possible. In so doing the operator insures rapid, uniform cooling of all plants within the container and consequently re-

[Continued on page 92]

#### THE POLYETHYLENE-KRAFT PACKAGING SEQUENCE FOR PERENNIALS

(Pictures at right) Assembling and tying an order of
 delphinium plants for packaging.
 Note that the tie is around the base of the crown.

2. Placing the plants in an open, 11/2-mil. polyethylene bag.
3. Wrapping the entire order in 60-

pound kraft paper for added protection. 4. Affixing the combination shipping-

nursery inspection tag to the completed package. Note that the tops are allowed to remain open for this type of material which is just beginning to force.









T. A. Mitchell, left, retired nurseryman, of Oyster Point, Va., receives honorary life membership in the Virginia Nurserymen's Association. The presentation was made at the Virginia group's summer meeting by John O. Williams, J. O. Williams Nursery, Richmond, Va.

# Virginia Meets at Seashore

By E. M. Quillen

The famous Chamberlain hotel, at Old Point Comfort, Va.—flanked on three sides by Chesapeake bay and Hampton roads—served as the summer meeting place for some 100 Virginia nurserymen, families and guests, August 15 to 17.

Taking advantage of good fishing grounds, many points of interest in the area and refreshing breezes from the extensive water frontage, the convention program was designed to dispense fellowship and recreation, rather than plant culture and merchandising. However, the forenoon of the 17th was devoted strictly to business.

The convention opened Sunday evening, August 15, with a cocktail hour and buffet dinner, after which association President Charles H. Kennedy briefly addressed the group and then presented Mrs. Elizabeth C. Loving, executive secretary of the "Plant Virginia" committee, who outlined steps being taken to set up and activate the state planting program.

The speaker pointed out that every citizen of the state stands to profit from such a program, and particularly the nurserymen. She called upon the nurserymen to give the program their wholehearted support in terms of time and effort. She announced plans to distribute litera-

ture relative to the organization and setting up of local planting committees to nurserymen and others interested in the planting program.

#### **Business Session**

At the business session, E. M. Quillen was elected for a 3-year term as a member of the Virginia agricultural conference board, representing ornamental horticulture. In accepting the appointment, Mr. Quillen spoke of his experiences as a member of the budget committee of Virginia Polytechnic Institute and of the difficulty that had been experienced in obtaining sufficient state appropriations to properly operate the department of ornamental horticulture at the institute. Some progress in this direction was reported by Mr. Quillen, but he added that there was much yet to be done and he called for a greater effort on the part of Virginia nurserymen and others interested in ornamental horticulture in seeking the necessary appropria-

Following Mr. Quillen's talk, it was pointed out from the floor that many legislators have a tendency to look upon ornamental horticulture as a luxury field, not deserving of the same consideration as other branches of agriculture. It was suggested, therefore, that the term "ornamental"

horticulture" be changed to "landscape horticulture" when dealing with state officials. It was pointed out that the term would be accurate, since landscaping is an important part of the business and it would also eliminate the word "ornamental."

Dr. Wesley P. Judkins, head of the department of horticulture at V. P. I., spoke on the work being done in his department and described his future needs. He, too, expressed disappointment at the insufficient state appropriations and called on the nurserymen to assist in obtaining more state funds in the future.

## **Group Advertising**

Group advertising was discussed at length by W. B. Higgs, Vadma Nursery Agency, Fairfax, Va. Members of the Virginia Nurserymen's Association in the northern part of the state have found it most profitable to advertise in groups, listing the names of all the participants in a common advertisement. Group advertising allows the purchase of larger space, and, all in all, the program has been found to be most successful and was recommended to other nurserymen.

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The proposed fair trade practice rules were discussed by members of the Virginia association and a special committee was appointed to study the rules, attend the conference with the Federal Trade Commission at New York and offer any amendments found advisable.

T. A. Mitchell was presented with a certificate of honorary life membership with the good wishes of the association for continued health and happiness. Mr. Mitchell is 84 years old and recently retired from the nursery business at Oyster Point, Va.

The committee for revising the bylaws presented a draft of the proposed new bylaws for the consideration of the membership. Action will be taken on these new bylaws at the forthcoming winter meeting.

On Monday morning, August 16, a fishing trip in the lower Chesapeake bay was enjoyed by some of the group, and in the afternoon the nurserymen cruised Hampton roads to the mouth of the James river and inspected the Newport News Shipbuilding & Drydock Co. from the river. The cruise continued to the Norfolk naval base and then back to the hotel. Some of the fishermen remained with that sport all day, not reporting back to the hotel until late at night. There were conflicting reports, as is customary after a fish-

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# Top-Grafting Technique Uses Plastics

By Victor J. McNitt

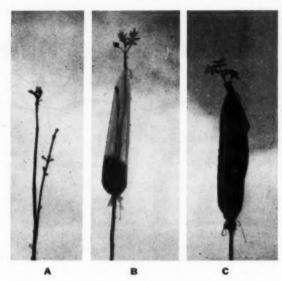
A new technique for top-grafting, or top-working trees has passed the experimental stage and is, in the author's opinion, now ready for application

Experimentation with this technique was started by the author in 1948 and since that time the results obtained have been so outstanding that the method should soon displace those currently in use. The extreme simplicity of the technique renders it employable by everyone, including the novice; the work and attention involved is almost negligible; the cost of materials is but a few pennies, and the materials can be used over and over.

Plants which are commonly considered as extremely difficult to handle respond readily to this technique, and the author has successfully applied it to two rare larches, which others report will not respond to any common method of propagation. In the past, these difficult plants had to be handled with the technique known as inarching or approach-grafting, which is an extremely exasperating process requiring almost constant attention to prevent damage or destruction from wind movement, drying of the stock, etc. Because of the great difficulty with which inarching is applied, those choice plants which required this treatment have practically gone out of existence and are now found only in unusual collections. This is indeed unfortunate, as some of our choicest and most unusual plants are in this difficult - to - propagate

# **Application Simple**

The application of this new technique is simplicity itself. First we must have a stock plant, and the general rules governing selection of stock plants for grafting are observed, except that with this method the stock can be of any size. That is, the operation can be applied to any plant from a seedling of workable



The three steps in top-grafting with plastics. Left, the graft itself; center, polyethylene tube affixed; right, muslin tube in place. In this sequence, white ash is being top-grafted to European weeping ash.

size to plants many years old. This is because the operation involves only the leading or main shoot of the plant. The balance of the plant remains untouched and unaffected until the operation is completed. Therefore, in the event that the operation is a failure (which is rare) the plant is in no way injured and it can be reworked later.

The selection of a large stock enables the creation of unusual and artistic effects in the landscape where there is a desire to develop a graceful or picturesque specimen. This is where this new technique will fill a great need. By elevating prostrate forms of trees known as weepers, we can produce extremely graceful fountain effects. This is accomplished by top-grafting a scion of the prostrate form at the desired height of an upright stock plant. The growth on such scions is immediately downward, which gives unusual and varying effects.

A renowned horticulturist of the past described one of his larches of this type as his vernal fountain of perpetual joy. Unfortunately this particular larch was almost impossible to propagate, and except for the young graft which the author has successfully started there is only one known specimen planting remaining, it being probably more than a century old. This specimen possesses unusual long recurved foliage unlike any other larch. This foliage is of a magnificent silvery blue color unsurpassed by the best color varieties of Colorado blue spruce. The true classification of this larch may never

be known, as it has never been known to produce cones, and its characteristics do not satisfactorily coincide with any known larch.

#### The Scion

To return to our propagation, after we have decided what effect we desire and have thus decided where to make our graft (set the scion), our next problem is to select the scion. As in any grafting, our scion should be selected from as healthy and as vigorous wood as possible. However, in cases when the wood is limited or the plant is rare, anything available may be used. The author has produced perfect specimens with this method from a tiny sliver containing a single bud.

The scion should be set in the leading shoot (main stalk) of the plant as the most vigorous flow of sap is concentrated here. The veneer or side graft is employed, and the scion is set low enough so that the plastic film can be secured to the main shoot above the scion's top (see illustration A, above). The union should be bound with plastic grafting tape, as this, because of its gas-permeability, will not bind, deteriorate nor suffocate the tissues at the union. No wax of any kind is used in this operation. This completes the first step.

The second step consists of drawing on a plastic tube or sleeve of .002-inch polyethylene film, which is sufficiently long to secure below the union and extend above the scion to secure at the top (see illustra-

[Continued on page 63]

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Dicentra, of which there are about 15 species described by botanists, though gardeners seldom have more than three, contains some important garden plants. Gardeners are missing one of the best of the race, when, for instance, they confine themselves to the common bleeding heart, Dicentra spectabilis. There is a little one, Dicentra oregana of botanists, from the Pacific northwest, that has definite claims on every lover of the beautiful. Imagine a 6 to 8-inch plant made up of finely divided leaves, beautifully silvered, and spikes of creamy flowers, tipped deep pink to purplish, from June to September, and you will have an adequate mental picture of the plant.

Unlike many beauties, it is easy to manage in eastern gardens, especially if the gardener remembers to shield the fat rhizomes from burning, midday sun. Western collectors seeing the plants growing on sunny mountain slopes have spread the word to give it full sun in the garden, presumably in the midwest and east. Actually, sunshine seems to be good for it so long as the roots are shielded from the heat, as with a low ground cover to shield the rhizome or when covered by a rock. It is then likely to be long-lived, if the soil is welldrained. So far as I have investigated, it is best propagated by division in early spring - March or or April here in northern Michigan.

# Blue-Eyed Mary

When a letter came one morning asking for a note on blue-eyed Mary, I was sure that I had written on it during the past few months, but as I cannot locate anything in the file on that plant, a brief note is included here.

Some gardeners are so sentimental about the flowers that were favorites in grandmother's garden that they grow them even if the plants possess little merit as ornaments in the modern garden. Such gardeners are particularly fortunate when they find an old favorite which adds, at the same time, a certain charm and beauty not obtainable in any other plant. Omphalodes verna (blue-eyed Mary to some, and creeping forget-me-not to others) is both

an old favorite and a thing of beauty, which has, unfortunately, become altogether rare in gardens.

It is a plant for part shade in a woodsy soil, preferably among porous rocks to afford it a cool root run. In that kind of a situation (that is the ideal, of course, but not absolutely necessary), it will send out stolons in all directions and cover the ground with the cool green of its leafage. In April it sends up slender stems to a height of six inches, more or less, carrying forget-me-not flow-

ers of the loveliest blue imaginable. It may be multiplied rapidly by division.

# A Small Heron's-Bill

Erodium reichardi roseum, which was formerly known as E. chamaedryoides roseum, is a big name for so small a plant. I cannot make up my mind which name I prefer, although I was raised on the latter and it brings up many a vision of beauty. But it does not make any difference which I prefer, for the oracle has

# QUEEN O' the LAKES

(Dark Velvety Red)

and 30 other fragrant

# SUB-ZERÔ HYBRID TEAS

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Also 20 Yellow and Orange Climbers

Also Florabundas and Grandifloras. Also many varieties of our new race of everblooming climbers which we call Everblooming Pillars. These bloom the first year like Hybrid Teas and on all stems and canes the year they grow; large Hybrid Tea blooms in great quantity.

These Roses have been honored by some of the leading Distinguished Service Medals.

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**BROWNELL ROSES** 

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# **EVERGREENS**

300 acres of choice Evergreens ready for immediate resale

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GARDNER'S NURSERIES, Inc.

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(In bags of 100) Ton size-13 cm. and up

Per 1000
Afterglow-Orange-salmon edge, 26 ins\$42.00
Allbright-Bright red, 24 ins 38.00
Bartigon-Crimson-red, 24 ins 38.00
Bleu AimableViolet-blue, 20 ins 50.00
Clara Butt-Appleblossom-pink, 26 ins38.00
Charles Needham-Extra scarlet, 28 ins 55.00
Cordell Hull-Red with white stripes 50.00
Farncombe Sanders-Rose-scarlet, 28 ins 38.00
Pride of Haarlem-Large red, 28 ins 38.00
Princess Elizabeth-Rose pink, 26 ins 40.00
Prunus-Salmon-pink, 24 ins 38.00
Queen of Night-Black, 28 Ins 38.00
Red Pitt-Scarlet, good forcer, 26 ins 42.00
Sunkist-Golden-yellow, 26 ins 42.00
The Bishop-Violet-blue, 28 ins 50.00
Zwanenburg-Pure white, 26 ins40.00
Rainbow Mixture-All colors 36.00
Mainbow Mixture—All colors 36.00

#### Cottage Tulips

Albino-Pure white, 22 ins	\$42.00
Carrara-Purest white, 24 ins	40.00
Dido-Orange-red with orange edge, 28 ins.	40.00
Golden Harvest-Pure, large yellow	38.00
Marjorie Bowen-Soft salmon-rose, 28 ins	40.00
Mothers Day-Pale yellow, 28 ins	38.00
Mrs. Moon-Lily-flowering, fine yellow	42.00
Princess Margaret Rose-Yellow, red edge.	38.00
Pride of Holland-Yellow, bright red border	42.00
Rainbow-Fine Mixture	36.00

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L'Innocence, pure white

Bismarck, porcelain-blue King of the Blues, deep blue Queen of the Blues, light blue

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#### Single Tulips

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Couleur	Cardinal-Dark	red		
	de Wet-Warm			
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#### **Double Tulips**

Electra-Wine-red .									 \$46.00
Mr. van der Hoef-Ye									
Orange Nassau-Oran									
Peachblossom-Deep	pi	ink							46.00

## Parrot Tulips

Top	Size 13	cm.	and	up		
Blue Parrot-Hel	iotrope				 	.\$50.00
Fantasy-Clear pin	ak with	green	1 str	ipes	 	. 40.00
Orange Favorite-						
Therese-Cherry-re						
Red Champion-In						
Sunshine Golden-	yellow				 	. 60.00

#### Triumph Tulips

Top size 13 cm. and up

Alberio-Bright red, with orange \$38.00
Bandoeng-Mahogany-red, yellow edge 40.00
Crater—Deep crimson-red 42.00
Crown Imperial-Crimson-red with yellow
border 42.00
Edith Eddy-Red with white border 42.00
Elisabeth Evers-Dark rose 50.00
Elmus-Scarlet, creamy-white edge 45.00
Kansas—Pure white 40.00
Rhineland-Orange-yellow 38.00
Telescopium-Violet 40.00
Ursa Minor-Golden-vellow 50.00

#### Rotanical Tulins

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ĺ	Red	Emperor-Extra	large,	scarle	t	 \$	75.0
ı	Eich	leri-Crimson-sca	rlet			 	38.0

# DAFFODILS

Heavy Mother Bulbs P	er 1000
Rembrandt-Large yellow-Imp. K.A	\$ 80.00
King Alfred-Best yellow, frilled	80.00
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Mrs. E. H. Krelage-White, creamy trumpet	80.00
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Mixture for Naturalizing-D. N. and Round	

# Extra bedding size 15 to 16 cm..... 8.00

MUSCARI Per 1000

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	Per	1000
	9 to	8 to
	10 cm.	9 cm.
Purpureus Grandiflorus-		
Large purple	.\$22.00	\$18.00
Mont Blanc-Pure white		
King of the Striped-White lilac.		
Mammoth Yellow-Golden-yellow		
Mixture-All colors	26.00	22.00

# **DUTCH IRIS**

	10 t	o 11 cm.	9 to 10 cm.	
Wedgewood-Light blue		\$35.00	\$22.00	\$12.00
•		8 to 9 cm.	7 to 8 cm.	6 to 7 cm
Golden Harvest-Yellow		\$28.00	\$18.00	\$10.00
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White Excelsior-White		28.00	20.00	12.00
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hada Balana awated F.O.B. New York or Bidgewood N. I.				

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spoken. As I was saying, either is a big name for so small a plant, but the plant is a treasure to its possessor, especially if he lives in one of the warmer sections of the nation. Some plants are able to give flowers of uncertain beauty over a long period; a few others are able to produce beautiful blooms over an equally long time.

Of the latter, the present plant is so endowed that it is able to give beauty from May to October. One could scarcely expect more from any plant. Coupled with its ease of culture is more than ordinary garden merit. Although it comes from Corsica, the home of many good plants that are too tender for our northern winters, it is hardy, standing most of our winters in protected places if the snow comes early and stays late. It would probably be advisable, however, for those who live north of the latitude of St. Louis, to give it a sheltered position. Good drainage and protection from low temperatures are about all that it needs. Then it should spread into broad mats of pretty, glossy foliage, over which bright pink heron's-bill flowers with deeper pink veins will appear all summer.

This plant may be propagated from fresh cuttings with a little old wood at the base. We had best re-sults from gently forced plants in late winter or early spring which were rooted in heat.

## Viola Jooi

A request came recently for a note on Viola govi, asking especially for a report on its possible sales potential in a neighborhood nursery. I shall report on the plant as it behaved here years ago and let the inquirer and other interested readers make their own deductions.

The reason that the name V. jooi heads the note is that I suspect it is the correct name for this violet; at least it appears to be so from European literature. Be that as it may, it proved to be one of the better violets in our trials, being easy in almost any sunny or half-shady spot that is not desert dry.

It makes a tuft of small, cordate leaves on petioles two to three inches long, the entire plant being smothered beneath a blanket of slightly fragrant rosy-lavender (more rosy than lavender) violets for close to two months in spring. Spring seedlings and old plants divided as soon as the spring blooming season is over usually give a month of bloom in late autumn, which makes a long

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PER	V8-D	3.85	4.15	4.65	5.35	6.05	7.05	9.25	11.60
M	VB-H		5.45	5.80	6.90	7.65	8.50	10.48	12.98
VITA-	QUANTITY PER CASE	2M	2M	2M	2M	2M	1M	500	500
BAND 18	WEIGHT PER CASE	31 LBS	36 LBS	40 LBS	48 LBS	59 LBS	35 LBS	23 LBS	31 LB5
VITA-	QUANTITY PER CASE	286	294	284	284	2M	1.00	1M	186
BAND D	WEIGHT PER CASE	21 LBS	24 LBS	27 LBS	32 LBS	41 LBS	24 LBS	32 LBS	42 LB1
VITA-	QUANTITY PER CASE		186	114	1M	500	509	509	500
BAND H	WEIGHT		28 LBS	32 LBS	39 LBS	24 LBS	28 LBS	37 LBS	49 LB1

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period of color for a plant that is so small.

I think that I now know why Anthemis sancti-johannis did not live up to the picture that I built up for it in this column several years ago when I first brought it to the attention of American gardeners. I have suspected it right along when catalogs described it as yellow-flowered: now I have seen what I take to be a form of A. tinctoria in at least two nurseries under label of sanctijohannis. No wonder the plant which I had in mind never received a good start, since a somewhat poor form of tinctoria has been foisted on our gardeners under its label. I still maintain that gardeners would embrace the true Anthemis sancti-johannis with joy if it were offered to

The available literature does not make it plain where our plant came from, though I faintly remember that someone wrote years ago that it was a native of Bulgaria. And I do not find it described in any of the floras at hand. There must have been at least three plants in the trade under this name-one, a pure vellow on the order of tinctoria; another, an 18-inch plant which bloomed itself to death when it produced an incredible number of large, orange daisies during its second year, and still another that I saw in the east several years ago which made a compact growth of about a foot and produced rather small heads of bright orange flowers from June to October, acting as a true perennial. Nurserymen who choose the orangeflowered ones may be certain that they are obtaining a brilliant garden ornament.

#### Cheiranthus Allioni

A recent inquiry about the origin of Cheiranthus allioni brings up a question that makes one's head swim. I certainly cannot answer it, and a survey of the literature makes me think that no one is prepared to answer it with certainty. In gardens it is known as Siberian wallflower, indicating Asiatic origin; in some European quarters it is said to be a hybrid erysimum, with Erysium ochroleucum and E. perofskianum as parents, and is therefore not a cheiranthus; in this country, it is tentatively referred to as Erysimum asperum, as when Hortus says that it "apparently belongs here," meaning to E. asperum. The last named is the plant that most nurserymen have always known as E. arkansanum, widespread over the northern sections of the continent (Arkansas, east and west, northward into Canada). It is much used in Eu-

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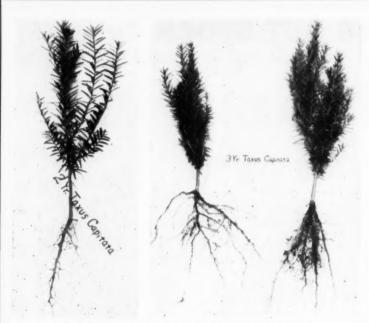
# Fall, 1954-LINING-OUT STOCK-Spring, 1955

I dil, 1001	-		114-001 3	•	•	Olt ohims,		,
Avales Chent (nontice)	DATE	Each		ach	Each per		lach per	Eac
Pastel shades, very hardy. 2-yr., field bed, T 3 to 5 ins., 3-yr., T	100	1000	Andorra Tuninor) 1/	00	1000	(Carolina Rhododendron).	100	100
3 to 5 ins., 3-yr., T	.28	\$0.18	4 to 6 ins., 1-yr., T	.28	\$6.20	2-yr., T., field bed	.35	* *
5 to 8 ins., 3-yr., T 8 to 10 ins., 4-yr., T 10 to 12 ins., 4-yr., T	.35	.32	8 to 10 ins., 2-yr., T	.35	.32	Khododendron catawbiense.		
10 to 12 ins., 4-yr., T	1.00	.50	Juniperus canadensis aurea	.43	.42	Reddish-purple, seedling-grown.		
Azaica kaempteri (Torch Azaici	n).		(Golden Canadian Juniper).			2-yr., T., field bed	.30	
Mixed colors. 2-yr., field bed, T	.28	.25	4 to 8 ins., 1-yr., T Juniperus giauca hetzi	.25		5 to 8 ins., 4-yr., T	.45	
Azalea mollis (Chinese Azalea)			(Hetz Juniper)	99	95	Rhododendron hybrid. Various colors, from red plants.		
Flame shades, mixed. 3 to 6 ins., 2-yr., T	.18	.16		.28	.25	Seedling-grown, very		
6 to 8 ins., 2-yr., T	.25	.22	10 to 12 ins., 3-yr., T	.45	.42	hardy.	0.0	90.5
6 to 8 ins., 2-yr., T 8 to 10 ins., 3-yr., T 10 to 12 ins., 4-yr., T 12 to 15 ins., 4-yr., T Azalea poukhanensis. Mauve,	.45	.60	cut back	.55	.50	2-yr., T., field bed	.45	\$0.3
12 to 15 ins., 4-yr., T	1.35			.70		3 to 5 ins., T. 5 to 8 ins., T. 8 to 10 ins., T. Rhus cotinus (Smoke Tree).	.55	
lavender shades.			(Irigh Juniner)			Rhus cotinus (Smoke Tree),	.85	
lavender shades. 3-yr., field bed, T	.35	.32	8 to 10 ins., 2-yr., T	.35	.32	10 to 12 ins., 3-yr., T 12 to 18 ins., 4-yr., T	.10	.1
Azalea schlippenbachi, Bright, pink blossoms.			10 to 12 ins., 2-yr., T	.40	.36	Taxus cuspidata (Spreading Yew	.25	.9
pink blossoms, 2-yr., field bed, T	.28	.25	cut back	.45	.42	6 to 8 ins., 1-yr., T 8 to 10 ins., 2-yr., T 10 to 12 ins., 3-yr., T	.25	.2
(Wollow's Hordy Downson)			Juniperus com, hib. fastigiata	.55	.50	10 to 12 ins., 3-yr., T	.35	.3
1-yr., field bed, T	.22	.20			-	Thaus media nicksi		
1-yr., field bed, T	.28		8 to 10 ins., 2-yr., T. 10 to 12 ins., 2-yr., T. 12 to 15 ins., 3-yr., T. 15 to 18 ins., 3-yr., T.	.35	.32	(Hicks' Yew). 6 to 8 ins., 1-yr., T	.28	.9
8 to 10 ins., 3-yr., T	.45	* * *	12 to 15 ins., 3-yr., T	.48	.45	6 to 8 ins., 1-yr., T	.38	.3
(Golden Thread Cypress)			cut back	.55	.50	Thuja occidentalis	.45	* *
(Golden Thread Cypress). 6 to 8 ins., 1-yr., T	.30	.28	Juniperus pfitzeriana compacta		10.0	(American Arborvitae)		
Chamaecyparis lawsonia aurea (Golden Lawson Cypress).			(Nelson variety). Compact-			12 to 15 ins., 3-yr., T 15 to 18 ins., 4-yr., T 18 to 24 ins., 5-yr., T	.38	-4
10 to 12 ins., 3-yr., T 12 to 15 ins., 3-yr., T	.45	42.	ly growing, gray-blue plitzer. Shears compactly			18 to 24 ins., 5-yr., T	.55	.8
Chamaecyparis lawsoniana allu	.55 mi	.50	and develops quickly with good, fiberous roots.			(Golden Arh.)		
Columnar, blue.			3 to 5 ins., 1-yr., T	.25	.22	4 to 6 ins., 1-yr., T	.25	.2
6 to 8 ins., 1-yr., T	.25	.22		.35	.32	4 to 6 ins., 1-yr., T 6 to 8 ins., 1-yr., T 6 to 8 ins., 2-yr., T 8 to 10 ins., 3-yr., T	.30	.3
8 to 10 lins., 1-yr., T. 10 to 12 ins., 2-yr., T. 12 to 15 ins., 3-yr., T.	.35	.32	oumperus putterium nuren		* * *	8 to 10 ins., 3-yr., T	.45	.4
12 to 15 ins., 3-yr., T Chamacyparis plumosa aurea	.45	.42	(Golden Pfitzer Juniper).	.25	.99	Thuja occ. elegantissima lutea (Geo. Peabody Arb.).		
(Golden-plumed Cypress).			6 to 8 ins., 1-yr., T	.30	.28	7 to 6 ing 1-vr m	.25	.2
6 to 8 ins., 1-yr., T	.25	.32	8 to 10 ins., 2-yr., T	.35	***	6 to H ins. 1-vr. T	.30	.3
(Golden-plumed Cypress). 6 to 8 ins., 1-yr., T. 6 to 8 ins., 2-yr., T. 8 to 10 ins., 3-yr., T.	.45	.40	(Spiny Greek Juniper)			6 to 8 ins., 2-yr., T 8 to 10 ins., 3-yr., T 10 to 12 ins., 3-yr., T	.40	.3
Chamaccyparis squarosa, Mossy				.35	.26	Thuja occ. globosa	.45	.4
green foliage. 5 to 8 ins., 1-yr., T	.30	.28	Juniperus squamata meyeri	.00	100.00	(Woodward Clobe Arb.)		
Chamaecyparis thyoides.			(Meyer Juniner)	.28		6 to 8 ins., 1-yr., T 8 to 10 ins., 2-yr., T 10 to 12 ins., 3-yr., T	.25	.3
6 to 8 ins., 1-yr., T Euonymus fortunei carrierei.	.25	.23		.35		10 to 12 ins., 3-yr., T	.45	
Semievergreen dwarf	10	10	8 to 10 ins., 2-yr., T Juniperus virginiana (Red Cedar).	.45	***	Thuja occ. plicata douglast		
4 to 6 ins., 1-yr., T 6 to 8 ins., 1-yr., T 8 to 10 ins., 2-yr., T 10 to 15 ins., 3-yr., T	.18	.16	8 to 10 ins., 3-yr., T	.15		(Giant Arb.). 6 to 8 ins., 1-yr., T. 8 to 10 ins., 2-yr., T. 10 to 15 ins., 2-yr., T. Thule occ. pyramidalls.	.22	.2
8 to 10 ins., 2-yr., T	.30	.28	8 to 10 ins., 3-yr., T	.20		8 to 10 ins., 2-yr., T	.30	.2
Euonymus fortunei coloratus.	.35	.32	Koelreuteria paniculata (Golden-rain Tree).				.38	.3
Procumbent, broad-leaved			8 to 12 ins., 3-yr., T	.18	.16	(Pyramidal Arb.). 6 to 8 ins., 1-yr., T. 8 to 10 ins., 2-y., T. 10 to 12 ins., 3-yr., T. 12 to 15 ins., 3-yr., T.	.28	0
creeper,	.16	.14	18 to 24 ins., 3-yr., T	.30	.20	8 to 10 ins., 2-y., T	.35	.8
6 to 8 ins., 1-yr., T 8 to 10 ins., 2-yr., T 10 to 15 ins., 2-yr., T	.25	.22	rieris noribunda			10 to 12 ins., 3-yr., T	.45	.4
Euonymus radicans coloratus.	.35	.32	(Mountain Andromeda). 3 to 6 ins., 2-yr., T.,,,,,,	.28	.26	Tsuga canadensis (Hemlock).	.55	* *
Small-leaved, procumbent			3 to 6 ins., 2-yr., T	.35	.32	Grown from seed, not		
creeper.	.16	.14		18	.15	collected plants.	.25	.0
6 to 8 ins., 1-yr., T 8 to 10 ins., 2-yr., T 10 to 15 ins., 2-yr., T	.22	.20	10 to 18 ins., 3-yr., T	.25	.20	5 to 8 ins., 3-yr., T 8 to 10 ins., 4-yr., T 10 to 12 ins., 4-yr., T	.35	.3
10 to 15 ins., 2-yr., T Euonymus fortunei erectus	.28	.26	(Drooping Leucothoe)			Viburnum opulus (Snowball).	.45	.4
(Tiples String tonomore)			4 to 6 ins., 2-yr., T	.20	.18	Red berries, fall.		
6 to 8 ins., 1-yr, T	.18	.16		.28	.25	6 to 10 ins., 2-yr., T., cut back	.12	.1
10 to 12 ins., 2-yr., T	.28	.25	10 to 12 ins., 3-yr., T	.45		10 to 15 ins., 3-yr., T.,		
12 to 15 ins., 3-yr., T	.35	.32	Liquidambar styraciflua			Viburnum opulus nana	.18	.1
Edunymus radicans vegetus	.45	***	(Sweet Gum). 1-yr., S., field bed	.10	.08	(Dwarf Bush Cranberry). A very good dwarf sort.		
(Evergreen Wintercreener)	10	.16	8 to 12 ins., 2-yr., T	.15	.12	A very good dwarf sort. Grows slowly and compact.		
6 to 8 ins., 1-yr., T 8 to 10 ins., 2-yr., T 10 to 12 ins., 3-yr., T	.18	.23	Holly-grape).			Very hardy.		
10 to 12 ins., 3-yr., T	.35	.32	8 to 5 ins., 2-yr., T	.18	.16	1-yr., field bed, T 3-yr., field bed, T	.18	.1
Ediony musicus.	.35		Picea excelsa (Norway Spruce).		.22	a year, meta dea, arrestration		* *
8 to 10 ins., 2-yr., T 10 to 15 ins., 3-yr., T	.55		8 to 10 ins., 3-yr., T	.13	***	DIMIGHED NUMBER OF	POG	187
Ilex crenata (Japanese Holly), Pyramidal.			10 to 12 ins., 4-yr., T	25	.18	FINISHED NURSERY S'I	Eac	
4 to 6 ins., 1-yr., T	.20	.18	Picea pungens glauca	1000		Customer Digs	pe	
6 to 8 ins., 1-yr., T	.25	.23	(Colorado Blue Spruce).				10	
8 to 10 ins., 2-yr., T 10 to 12 ins., 3-yr., T	.55	* * *		20 28	.18	Tsuga canadensis (Hemlock), 3 to 4 ft	. 82.	50
Ilex crenata convexa (bullata)			Pieris Japonica	40		4 to 5 ft	3.	.23
(Boxleaf Holly). 4 to 6 ins., 1-yr., T	.20	.16	(Jananese Andromeda)	0.5	0.7	Taxus capitata (Upright Yew)		.75
6 to 8 ins., 1-yr., T 8 to 10 ins., 3-yr., T	.25	.23	3 to 6 ins., 2-yr., T	25 32	.23	1 to 4 ft	8.	00
8 to 10 ins., 3-yr., T 10 to 12 ins., 3-yr., T	.45	.40	8 to 10 ins., 3-yr., T	45	.42	Thuja occidentalis	9.	50
Ilex crenata helleri (Heller's	. 20	* * *	10 to 12 ins., 4-yr., T	65	* * *	(American Arborvitae).		0.0
Dwarf Holly). 1-yr., field bed, T	10	10	Pinus mugho (Dwarf Mugho Pine)	18	.16	5 to 6 ft	3.	75
1-yr., field bed, T	.18	.16	6 to 8 ins., 4-yr., T	22	.20	7 to 8 ft	4.	50
8 to 12 ins., 2-yr., T	.35	+++	Pinus nigra (Austrian Pine).	10	0.0	8 to 10 ft	5.5	25
Hex opaca femina (American				10 18	.08	25 at the 100 Rate.		
Holly, Female). 1-yr., field bed, T	.35		Pinus strobus			300 at the 1000 Rate.		
llex rotundifolia (Roundleaf			(Eastern White Pine).	15		TERMS: Cash with order-fr	ee p	ack
Jananese Holly)	.20	.18	4 to 8 ins., 3-yr., T	15	***	ing; otherwise, 1/3 deposit wi and balance C.O.D. and packing	th o	cont
6 to 8 ins., 1-yr., T	.30	.28	(Firethorn).			All shipments by railway expres	18.	
3 to 6 ins., 1-yr., T. 6 to 8 ins., 1-yr., T. 8 to 10 ins., 2-yr., T. 12 to 18 ins., 3-yr., T.	.45	.40	6 to 8 ins., 2-yr., T	25 32	.23	Write for our complete pric	e list	ł.
and the Atlanta de Fire Leaves	. 147		a se an energy will be a second of	-		The samples of the		

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2-yr., S., 5 to 9 ins	6.00	30.00	1-yr., T., 5 to 6 ins 20.00 150.00
3-yr., S., 8 to 18 ins	8.00	40.00	T. VIIIS CHISPIDATA CARITATA
LILAC			TAXUS CUSPIDATA CAPITATA 2-yr., S., (2-0), 4 to 7
2-yr., S., 4 to 12 ins	7.00	35.00	ins 15.00 125.00
2-yr., 3., 4 to 12 ths	7.00	35.00	3-yr., S., (3-0), 6 to 12
NORWAY MAPLE			ins 30.00 250.00
1-yr., S., 6 to 10 ins	9.00	45.00	TAXUS HICKSI
2-yr., S., 10 to 15 ins., 14	4.00	70.00	1-yr., T., 5 to 7 ins 20.00 175.00
PIN OAK			TAXUS HUNNEWELLIANA
	5.00	100.00	
2-yr., S., 15 to 20 ins., 18	5.00	100.00	The state of the s

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ropean gardens as a spring bedder and is there available in at least one named variety, Golden Gem. For that purpose, the seeds are planted in July and handled like Cheiranthus allioni. It should be pointed out that E. asperum is yellow-flowered, while C. allioni is typically orange, though it is now available in golden yellow in variety Golden Bedder.

# Alchemilla Alpina

A friend of this column writes as follows: "About a year ago you casually praised Alchemilla alpina, and I have been waiting ever since for a fuller note. Can you supply it now?" Yes, I can, and with pleasure, because it is one of my favorite plants.

When I was preparing to write this note, I went to the file on lady'smantle and found the following quotation, without credit. As it sounds much like something which the late Peter van Melle might have said, I am crediting it to him, because, in addition, I remember that it was also one of his favorite small plants. "As I have it," he wrote, "A. alpina makes small mounds of glorified strawberry leaves, averaging about two and a half inches across, palmately cleft into (mostly) seven fingers. This foliage is dark green and glossy on the upper side, and each lobe is stitched around with a fine silver thread. But the fine part of it all is the reverse side of the leaf - a creation of soft silk and silver sheen that is a feast, both to the touch and to the eye." The leafage is, of course, the plant's fortune, and the 6-inch flowering stems, bearing inconspicuous flowers, may, with reason, be removed before flowering, if seeds are not wanted. It is easy to grow in any light soil, doing best here in a rather infertile one, and is fully hardy.

# Iris Reticulata

A New Jersey reader asks how to propagate Iris reticulata. Because I never have been able to do more than induce reticulata to hold its own in this garden, I would not attempt to answer that question. But I remember a letter received years ago from a Virginia correspondent which outlined his method of handling this bulbous iris. As I remember, it ran something like this:

A naturally heavy, fertile soil had been made lighter by incorporating a liberal amount of sand with it and enriched with an application of a half pound of a 4-12-10 fertilizer to 10 square feet. It was then spaded as deeply as a spade would turn it IN

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# Malathion controls:

Aphids Spider mites Whitefly Mealybugs Thrips Japanese beetle adult Four-lined leaf bug Tarnished plant bug Rose leafhopper Potato leafhopper Soft brown scale Monterey pine scale Black scale crawlers Pine needle scale Oyster shell scale Juniper scale Fletcher scale Bagworms Oak kermes Scurfy scale Florida red scale Azalea scale Magnolia scale Pine leaf scale Euonymus scale Birch leafminer European pine shoot moth Tent caterpillar Lace bugs

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Juniperus chinensis columnaris (grafted blue), 4 to 5 ft	62.50 77.50	\$ 600.00 700.00
Juniperus chinensis pfitzeriana, IB to 24 ins	32.50	300.00
24 to 30 ins	42.50	400.00
30 to 36 ins	52.50	500.00
Juniperus excelsa stricta, IB to 24 ins	25.00	225.00
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15 to 18 ins	42.50	400.00
18 to 24 ins	47.50	450.00
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Taxus cuspidata capitata (sheared upright), 4 to 41/2 ft	175.00	1,500.00
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Taxus densiformis (spreading), 15 to 18 ins	47.50	450.00
18 to 24 ins	52.50	500.00
24 to 30 ins	62.50	600.00
Taxus Halloran (upright), 18 to 24 ins	50.00	475.00
Taxus hatfieldi, 18 to 24 ins	50.00	475.00
Taxus hatfieldi, 24 to 30 ins	55.00	525.00
Taxus hicksi, 18 to 24 ins	50.00	475.00
Taxus thayeri (spreading), 24 to 30 ins	60.00	****
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DECIDUOUS SHRUBS Almond, Pink-flowering (own root), 2 to 3 ft	5.00	45.00
Barberry, Redleaf, 12 to 15 ins., 3-yr., T	3.50	30.00
Barberry, Redleaf, 12 to 15 ins., 3-yr., T	4.50	40.00
18 to 24 ins., 3-yr., T	5.50	50.00
Cornus florida rubra (Pink Dogwood), 18 to 24 ins	13.50	125.00
Cornus florida rubra (Pink Dogwood), 2 to 3 ft	17.50	150.00
Cotoneaster acutifolia, 18 to 24 ins. T	2.50	20.00
Cotoneaster acutifolia, 2 to 3 ft. T	3.00	25.00
Cydonia japonica, 18 to 24 ins	3.50	30.00
Cydonia japonica, 2 to 3 ft	4.50 4.50	40.00
Cydonia laponica (upright red), 18 to 24 ins	5.50	50.00
Deutzia gracilis, 12 to 15 ins	4.50	40.00
Deutzia gracilis, 15 to 18 ins	6.50	60.00
Deutzia gracilis rosea, 12 to 15 ins	4.50	40.00
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Deutzia crenata or Pride of Rochester, 2 to 3 ft	3.50	30.00
Deutzia crenata or Pride of Rochester, 3 to 4 ft	4.00	35.00
Forsythia spectabilis, 2 to 3 ft	4.00	35.00
Forsythia spectabilis, 3 to 4 ft	4.50	40.00
Honeysuckle:		
(Morrowi, Pink Tatarian, Red Tatarian, White Tatarian), 2 to 3 ft	3.50	30.00
3 to 4 ft	4.00	35.00
Philadelphus virginalis, 18 to 24 ins., heavy	3.00	25.00
Philadelphus virginalis, 2 to 3 ft., heavy	3.50	30.00

Privet Amur River North, 2-yr., 12 to 18 ins., 3 br. and up	1.40 1.50 2.00	12.00 14.00 17.50
3-yr., 3 to 4 ft., extra-heavy, T	2.25	20.00
Weigela rosea, 2 to 3 ft	4.50	4

Weigela rosea, 2 to 3 ft Weigela rosea, 3 to 4 ft	4.50 5.50	40.00 50.00
SHADE TREES		
Elm, Chinese, 1 to 11/4-in, cal Elm, Chinese, 11/2 to 13/4-in, cal Maple, Soft, 8 to 10 ft Maple, Soft, 10 to 12 ft.	22.50 17.50	125.00 200.00 165.00 190.00

#### LINING-OUT SHRUBS

p.	er 100	Per 1000
Barberry, Thunberg (Green), 2-yr., 9 to 12 ins., S	6.50	\$ 60.00
Barberry, Redleaf, 2-yr., 9 to 12 ins., S	9.50	90.00
Euonymus alatus compactus, 2-yr., 8 to 12 ins., T	27.50	250.00
Philadelphus virginalis, 12 to 18 ins	14.00	120.00
Rhodotypos kerrioides (White Kerria), 6 to 12 ins., S	12.00	100.00



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over. The bulbs were planted three inches deep and eight or 10 inches apart. As soon as leaf growth commenced to show at the surface the following spring, nitrate of soda was spread on the surface around each plant at the rate of two ounces to 10 square feet.

After two years growth, the original 12 produced about 600 blooming-size and a large number of smaller bulbs, which is a good increase for any plant. No doubt a greater increase would have been obtained if the bulbs had been dug both years of the trial. Incidentally, it is necessary to dig every year in our section, digging as soon as the foliage ripens off and storing in a dry shed until late September.

# Ajuga for Edgings

I visted a garden this summer which I had not seen since 1947, at which time the owner was experimenting with a variegated form of Ajuga reptans as an edging plant. This experiment was so satisfactory that he now has an edging of it along the entire length of his main path through the garden. My own experiences with the bugles has led me to the belief that their spreading habits would create chaos or it would be burdensome to keep them under control, but this busy gardener has used the plant from choice rather than necessity, claiming that a little time spent on the long ribbon of plants with a spud hoe kept it within bounds. The pretty foliage, together with a long display of pink, labiate flowers, certainly makes a most effective edging. Ajuga reptans with variegated foliage is also available with white flowers, as well as the green leaves and blue flowers of the type.

While on the subject of bugles, I might as well call attention to a few others, including the curiously pretty A. metallica crispa, whose fortune is in its curled leaves of metallic sheen. It is a little less invasive than the reptans group mentioned in the preceding paragraph; so it can be used in more refined company. But the least invasive of any that I know is the pretty A. genevensis, which also has the prettiest blue flower color in the genus. All that have been in this garden are easily grown and hardy here in northern Michigan, with the exception of A. orientalis,

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# Reflections on the Progress and Problems of Nurserymen By E. Sam Hemming

#### STERILITY IN PLANTS

In nature, the primary object of plants is to reproduce themselves. Often a sick tree or plant will bear a tremendous crop of seeds as its dving effort. Yet man has so upset the balance of nature in developing his agriculture and horticulture that many of the plants he grows are sterile or nearly so. In addition plants in their evolution have developed some curious means of fertilization so that the causes of sterility in plants make a most interesting study.

The story of the tiny wasp and the Smyrna fig in California is familiar to nurserymen, and there are other parallel stories. There is a yucca, for instance, that must be pollinated by a certain moth which lays its eggs in the flower while pollinating it. The young larvae feed on the developing seeds but do not eat them all. Both the plant and the moth are actually necessary for the completion of the life cycle of each. There are other flowers, too, that are particularly dependent on certain insects for their pollination.

The phenomenon that makes crosspollination necessary in plants is a most interesting one. In some cases the stigma sticks out so far beyond the anthers that it is most unlikely that pollen from a given flower will reach the stigma of the same flower. The case of the Chinese chestnut is an unusual one. Self-pollination can take place but is rare because pollen ripening and receptivity do not occur simultaneously although they overlap slightly.

Another nut plant, the filbert, illustrates another method by which plants make cross-pollination almost mandatory. Here the catkins and female flower are borne separately but on the same plant. In eastern Maryland filberts are difficult to crop because of their strange flowering period, which is usually in February, probably the worst time of the year. Often freezes will interfere with fertilization. This is typical of plants moved from one climate to another. In some plants the flowers of each sex are borne on separate

plants. The prime example is holly, and of course on such plants only cross-pollination is possible. Man further complicates things by selecting in some cases to grow only the female in the holly, and one farmer told me he tried to plant only the male asparagus. I do not know whether that is a sound practice or

When one considers how far the tiny cell must grow in the style of some flowers before it completes fertilization it is a wonder they are fertilized at all. In the lily the tube must grow three or four inches. A

related plant, Lycoris squamigera, of which this nursery has grown thousands, has never yet borne seed, no matter what has been done. I understand scientists at Beltsville, Md., working with the same plant have tried many things including placing hormones in the tissue. One might wonder why, with the natural abundance of all sorts of pollen, we do not obtain all sorts of strange hy-Yet minute differences in chemical content of the sticky surface of the stigma will inhibit the growth of the wrong kind of pollen. In plants this may also prevent selfpollination.

In a number of plants widely grown by man seeds have completely disappeared—in the banana, the seedless grapes and oranges for instance - and in these cases actual propagation by seeds is impossible, usually because of the malformation or absence of a necessary flower part. In this case it is the sterile fruit that man is interested in. The development of showy flowers has caused

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Acer saccharum 2 to 3 ft
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2 to 3 ft 12.00 100.
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4 to 6 ft 60.00 500.
Clethra alnifolia
6 to 18 ins 7.00 60.
Ilex verticillata
1 to 2 ft 10.00 90,
Syringa vulgaris
1 to 2 ft 7.00 60.
Viburnum acerifolium
6 to 18 ins 8.00 70.
Viburnum cassinoides
1 to 2 ft 8.00 70.
Viburnum dentatum
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Tsuga canadensis
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Tsuga canadensis
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9 to 12 ins 6.00 45.
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Elaeagnus Fruitlandi

Elaeagnus Simoni Euonymus Coloratus Euonymus Fortunei Erectus

(small leaf)

Euonymus Patens

Gardenia Fortunei Ilex Cornuta Burfordi

Ilex Cornuta Femina Ilex Crenata Convexa

Ilex Crenata Rotundifolia

Ilex Opaca East Palatka (heavily sheared)

(well sheared)
Pride of Houston

Jasminum Floridum Laurel Cherry (well sheared)

Ligustrum Lucidum (Griffing type)

(Black Wax)

Ligustrum Lucidum Nanum Loropetalum Texanum Magnolia Glauca

Magnolia Grandiflora Magnolia Soulangeana Magnolia Soulangeana Nigra

Nandina Domestica Photinia Serrulata

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Arborvitae, Or. Excelsa Arborvitae, Or. Fruitland

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Arborvitae, Or. Newark Arborvitae, Occ. Globosa Arborvitae, Occ. Pyramidalis Arborvitae, Occ. Nigra

(Dark Green)
Cedrus Deodara
Juniper, Andorra
Juniperus Excelsa Stricta
Juniperus Glauca Hetzi
Juniperus Glauca Hetzi
(staked and sheared)

Juniperus Fastigiata Juniperus Hibernica

Juniperus Pfitzeriana Juniperus Pfitzeriana Compacta

Juniper Pfitzeriana Aurea Juniperus Sabina Juniperus Sabina Vonehron

Juniperus Sabina Vonehron (staked and sheared)

Juniperus Scopulorum Juniperus Sylvestris (Chinensis Femina)

Juniperus Virginiana Burki Juniperus Virginiana Canaerti Juniperus Virginiana Dundee Juniperus Virginiana Glauca

Pinus Mughus Pinus Nigra (Austrian Pine)

Pinus Sylvestris (Scotch Pine)

# CANNED STOCK Abelia Grandiflora

Gardenia Fortunei
Gardenia Mystery
Ilex Burfordi
Ilex Convexa
Ilex Rotundifolia
Ilex Helleri
Magnolia Grandiflora
Pyracantha Formosana
(light)
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many plants to become sterile or partly so. Large double flowers are the aim of many hybridizers and this doubling is usually created by encouraging the increased production of petals at the expense of some of the stamens. Many of our showiest and ornamental flowers are in reality malformations, although that sounds like an unkind thing to say about a rose. The rose, in spite of intense hybridizing, has not lost all of its fertility. Trees like the flowering cherries and certain flowering crab apples are now so completely sterile that it is necessary to go back to parents to produce new varieties.

Nature itself does not often fall back on vegetative propagation for survival, especially in the higher forms of plant life, yet it does in a few cases. In still other cases the production of seeds is so rare that it is noteworthy, as in the case of bamboo and certain species of cereus. We grow a number of ornamental shrubs that produce seeds only when they reach old age. One of the best examples is English ivy, which actually assumes a different character in growth and foliage when it finally goes to seed. Still others, like Lonicera pileata and boxwood, bear seeds only when they are old. The boxwood plants up north have been moved out of their native climate for they flower in January and February like the camellias, osmanthus and tea plants. These are usually prohibited by frost from making seeds. Frost does not necessarily rob all pollen of its fertilizing powers, for the pollen of the arctic willows is seemingly capable of withstanding freezing.

Some plants are wind pollinated; these plants, because of the hit or miss system, produce prodigal amounts of pollen. It is usually the botanically lower forms that are so pollinated, like the pines and other cone-bearing plants and the grasses. We have a row of deodara cedar trees along our driveway which have borne cones for a number of years but never produced seed until a year ago; we also have a row of Cryptomeria japonica trees which have not yet produced seed. Whether the cause is climate or the lack of huge amounts of pollen I do not know.

The pollination problems of plants are endless and will continue to become more complex as we shift plants around for our use; yet, in spite of this, nature seems to abhor a plant vacuum and fills every nook and cranny it can with some form of plant life.

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Azalea		
Lady Lilac, 6 to 8 ins.	15	.121/2
Poukhanensis, 6 to 8 ins.	15	.121/2
Cotoneaster		
Divaricata	171/2	.15
Francheti	20	.181/2
Repens	171/2	.15
Salicifolia		.181/2

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Deutzia Gracilis, 6 to 8 ins.  Deutzia Gracilis Rosea, 6 to 8 ins.  (Extra-nice plants)	.10

*Euonymus Patens Sieboldianus, 6 to 8 ins	.15	.121/2
llex		
Cassine Angustifolia	.20	.181/2
Cassine Myrtifolia	.20	.181/2
Cornuta Burfordi	.221/2	.20
Glabra	.20	.181/2
Opaca (cuttings from choice berry plants)	.45	.40
Opaca East Palatka	.30	.271/2
Vomitoria	.25	.221/2
Juniperus		12
Pfitzeriana	.20	.181/2
Sylvestris	.20	.181/2
Kolkwitzia (Beauty Bush)	.171/2	.15
Prunus Laurocerasus		
Officinalis (English Laurel)	.20	.18

	Ready for Canning or Field Planting	
Pyracantha	Lalandi	.15
Pyracantha	Serrata (a good red)	.181/

Photinia Glabra	.20	.181/2
Retinospora Cyano Viridis (Beautiful blue color— an old plant making new stand—something you		
should have.)	.221/2	.20

	Rea	ady	1	fo	r	La	n	ds	c	ap	e	1	W	0	rk		
Hedera																	
Helix (English	lvy)															.15	.121/2
Baltica																.171/2	.15
Self-branching																.171/2	.15
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## COVER ILLUSTRATION

# Ulmus Carpinifolia Umbraculifera

While the globe smooth leaf elm is not new, having been introduced from Turkistan by 1879, it has not been seen or used much in this country outside of arboretums. During the past few years as more attention has been given to the choice of trees based on their functional use, this variety of the smooth leaf elm has come clearly into the picture.

In habit of growth it forms a

In habit of growth it forms a dense, globose head with many somewhat small, slender branches. The cover illustration indicates the typical growth habit of high-budded or grafted specimens. Plants grown as low specimens show a low, mound-like growth with branches to the ground. The tree-type plants are, however, much more useful.

The generic name, ulmus, is the ancient Latin name of the elm; the specific name, carpinifolia, refers to the fact that the leaves resemble those of the genus carpinus, and the variety name, umbraculifera, refers to the umbrella-shaped head. Actually, it would have been better if the variety had been named globosa since that more clearly describes its shape.

Leaves of the globe smooth leaf elm are elliptic or nearly so and average one and one-fourth to two and three-fourths inches in length. They are somewhat rough on the upper surface.

Based on limited observations this plant seems adaptable to a wide range of soil types; it transplants readily and requires little pruning. It is susceptible to the usual insects and diseases of English elms but because of its size, spraying can be easily accomplished.

Ulmus carpinifolia umbraculifera can be used to good advantage in narrow tree lawns, street planting under low utility lines and as a small specimen tree for lawn planting. This is a small tree that is well worth growing and using.

L. C. C.

WALTER E. CAMPBELL, horticulturist, Greensboro, N. C., recently returned home from the hospital and is recuperating from an attack of double pneumonia and a thrombosis which hospitalized him for five weeks. On orders from his doctor, he is closing out his business. He intends to take up plant breeding as a hobby.

A NEW nursery is being started by Robert Bocknor, at Elmhurst, Ill. His stock consists mainly of ornamental and dwarf fruit trees. MAN

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SHRUBS				Per	Per	Per	Per	Per	Per
ALTHAEA HIBISCUS (Shrub Alt)				10	. 100	1000		100	1000
P. P.		Per	LIGUSTRUM SINENSE (South	Privet )		87 FO	LIQUIDAMBAR STYRACIFLUA		
Ardens, double, violet. 1		1000	6 to 12 ins., S	* * *	\$1.00	\$7.50 9.00	(Sweet Gum). 18 to 24 ins., 8	\$4.00	\$25.0
6 to 12 ins., C		\$ 25.00	12 to 18 ins., S PHILADELPHUS CORONARIUS	***	1.25	9.00	2 to 3 ft., 8	6.00	35.0
12 to 18 ins., C	4.00		(Sweet Mock Orange).	2			3 to 4 ft T br \$ 8.00	75.00	
12 to IB ins., br \$ 1	.25 8.00	****	12 to 18 ins., 2-yr., br	\$1.00	7.50		3 to 4 ft., T., br \$ 8.00 4 to 5 ft., T., br 12.50	100.00	***
The Banner, double, white and r	red stripes.		18 to 24 ins., 2-yr., br	2.00	15.00	****	LIRIODENDRON TULIPIFERA	200.00	
12 to 18 ins., 2-yr., T 2	.50		2 to 3 ft., 2-yr., br	3.00	25.00	****	(Tulip Tree).		
18 to 24 ins., 2-yr., br 3	.00	****	SPIRAEA VANHOUTTEI, snow	white	20.00		3 to 4 ft., T., br 7.50	60.00	***
Rubus, single, red.	3.00	25.00	6 to 12 ins., C		3.50	30.00	4 to 5 ft., T., br 10.00	90.00	
6 to 12 ins., C			12 to 18 ins., hedging	.75	5.00	40.00		110.00	***
Perry's Purple, double, dark	3.50	20.00	18 to 24 ins., br	2.00	15.00	90.00		175.00	
purple. SOLD OUT.			2 to 3 ft., well br	3.00	25.00		POPULUS NIGRA (Lombardy Poplar).	20.00	
6 to 12 ins., C 2	.50 15.00		SPIRAEA PRUNIFOLIA (Brida				3 to 4 ft., T., br 2.50	25.00	***
12 to 18 ins., C 3	.00 20.00		12 to 18 ins., 2-yr., T	2.50	20.00	****	5 to 6 ft., T., br 3.00 6 to 8 ft., T., br 5.00	45.00	
18 to 24 ins., br 4	.00 30.00	****	18 to 24 ins.,	2.00	20.00				
This is the first time this althae	a has been o	offered on	2-yr., T., br		25.00	* * * *	BROAD-LEAVED EVER	GRE	:142
the market, REGISTRATION NO.	368.		2 to 3 ft., 2-yr., br		40.00	****	ABELIA GRANDIFLORA (Glossy Abelia	40	
Snow Drift, single, white.			SPIRAEA OPULIFOLIA (Dwarf 12 to 18 ins.,	Nineba	IFK).		6 to 12 ins . C 1.00	8.00	75.0
6 to 12 ins., C	.60 4.00		2-yr., T., br	3.00	20.00		12 to 18 ins., C 1.25	10.00	***
	.75 6.00		18 to 24 ins.,	2.00	20.00		18 to 24 ins., br 2.00	15.00	
18 to 24 ins., br 1 CYDONIA JAPONICA	.25 10.00	****	2-yr., T., br	4.00	30.00		2 to 3 ft., br 3.50	35.00	
(Red-flowering Quince).			SYMPHORICARPOS VULGARIS				EUONYMUS PATENS (Largeleaf).		
6 to 12 ins., C 1	.50 10.00		12 to 18 ins., C	.50	3.00	25.00	6 to 9 ins , 2-yr., T 6.00	50.00	
12 to 18 Ins., C 2			18 to 24 ins., br	.60	4.00	35.00	9 to 12 ins., 2-yr., T 8.00 12 to 18 ins., 2-yr., T 10.00	65.00	* * *
	.00 25.00		SYRINGA PERSICA (Persian Li	ilae).			12 to 18 ins., 2-yr., T 10.00	90.00	* * *
DEUTZIA SCABRA (CRENATA).			6 to 12 ins., C	1.25	10.00		VINES and CREEP	PERS	
	.25 6.00		12 to 18 ins., C	1.50	12.00				
18 to 24 ins , br 1.	.50 8.00		12 to 18 ins., br	2.50	20.00	* * * *	6 to 12 ins., S	3.00	
ORSYTHIA FORTUNEI (Golden			18 to 24 ins., br	3.00	25.00	****		5.00	***
	.50 3.00		CHARE OR		ENTA		12 to 18 ins. 8	7.50	***
	.60 4.00	30.00	SHADE and OR	MAM	ENIA	/L	LONICERA HALLIANA	7.00	
ONICERA BELLA ALBA, white.	.25 10.00		TREES	5			(Hall's Honeysuckle).		
12 to 13 ins., 2-yr., br 1. 18 to 24 ins., 2-yr., br 2.	.00 15.00						Light liners	1.00	8.00
	.50 20.00		ACER RUBRUM (Red Maple).	E 00	20.00		Heavy lipers	1.50	12.5
LONICERA MORROWI			2 to 3 ft., T., br	7.50	30.00 40.00	****	2-vr. T. No. 1 1.25	10.00	90.00
(Morrow's Honeysuckle).			3 to 4 ft., T., br		60.00	****	1-yr., T., No. 1 1.00	7.50	65.00
12 to 18 ins., 2-yr., br 1.	.50 10.00		ACER DASYCARPUM	10.00	00.00	****	1-yr., T. No. 2	6.00	40.00
	.00 15.00	****	(Silverleaf Maple).				VINCA MINOR (Blue Myrtle).	.60	5.00
2 to 3 ft., 2-yr., br 2.	.50 20.00	****	6 to 12 ins., S		1.25	10.00	Small liners	1.00	7.50
LONICERA TATARICA, pink.			12 to 18 ins., 8		1.50	12.50	Heavy liners	4.00	30.00
12 to 18 ins., 2-yr., br 1.	25 8.00	****	3 to 4 ft.,				Heavy made-up clumps75	6.00	50.00
	50 10.00	****	3 to 4 ft., 2-yr., T., br	6.00	50.00	****			00.00
2 to 3 ft., 2-yr., br 2. LONICERA FRAGRANTISSIMA	.00 15.00	****	4 to 5 ft.,				WEEPING WILLO	W2	
(Winter Honeysuckle).			2-yr., T., br		60.00	****	SALIX BABYLONICA		
12 to 18 ins., 2-yr., br 1.	25 10.00		ALBIZZIA JULIBRISSIN (Mime				(Weeping Wil'ow).		
18 to 24 ins., 2-yr., br 2.	00 12.50		6 to 12 ins., 8		1.50	12.50	18 to 24 ins , C50	4.00	35.00
IGUSTRUM AMURENSE (North	Privet).		12 to 18 ins., 8	***	2.50	25.00	2 to 3 ft., C	6.00	50.0
6 to 12 ins., C	50 3.00	25.00	CERCIS CANADENSIS (Redbud		0.00	30 00	3 to 4 ft . C 1.50	12.50	100.00
12 to 18 ins., C	60 3.50	30.00		* * *	2.00	15.00	4 to 5 ft., br 5.00	40.00	* * *
	75 4.00	35.00	12 to 18 ins., S	* * *	2.50 3.00	35.00	SALIX NIOBE (Golden Weeping Willow).		
	.00 5.00	45.00	2 to 2 ft &	***	4.00	35.00	6 to 12 ins., C	3.50	30.00
	25 6.00	50.00	2 to 3 ft., 8 3 to 4 ft., 8	***	6.00	50.00	12 to 18 ins., C	4.00	35.00
18 to 24 ins., 3 br 1.	50 7.50	65.00	CORNUS FLORIDA RUBRA		0100		18 to 24 Ins., C	6.00	50.0
IGUSTRUM IBOLIUM (Ibolium I	50 3.00	25.00	(Pink-flowering Dogwood).				2 to 3 ft., C 1.00	8.00	75.00
	60 4.00	30.00	6 to 12 ins	8.00	75.00		3 to 4 ft., C 1.50	12.50	***
	75 5.00	45 00	12 to 18 ins 1	L2.00	100.00	****	NATIVE AZALEA	AC	
18 to 24 ins., 2 br 1.	00 6.00	55.00	18 to 24 ins 1	15.00	130.00	* * * *		43	
2 to 3 ft., 2 br 1.	25 7.50	65.00	2 to 3 ft 2	20.00	175.00	****	Collected		
12 to 18 ins., 3 br 1.	00 6.00	50.00	CORNUS FLORIDA				AZALEA NUDIFLORA (Pinxterbloom).		
18 to 24 ins., 3 br 1.	25 7.50	60.00	(White-flowering Dogwood).				6 to 12 ins	3.50	25.00
2 to 3 ft., 3 br 1.	50 10.00	****	18 to 24 ins.,				12 to 18 ins	5.00	30.00
IGUSTRUM OVALIFOLIUM			2-yr., T., well br	7.50	60.00	* * * *	18 to 24 ins 1.00	7.50	50.00
(California Privet).		00.00	2 to 3 ft.,	9.50	70.00		2 to 3 ft., br., tops 2.00	15.00	125.00
6 to 12 ins., C	50 3.00	22.50	2-yr., T., well br	6.50	70.00	* * * *	CHYRISOSIS MARIANA (Golden Aster)	600	40.00
12 to 18 ins., C	60 3 50	25.00	3 to 4 ft.,	0.00	90.00		Medium clumps 1.00	6.00	60.00
	75 4.00	30.00	2-yr., T., well br 1 CLADRASTIS LUTEA (Yellow W		30.00	***	Heavy clumps 1.25 Flowers from August until frost. If		
18 to 24 ins., 2 br 1.		40.00 50.00	6 to 12 ins. 8		6.00		we can ship while in bloom. Height 1	to 2 ft	Grow
12 to 18 ins., 3 br 1. 18 to 24 ins., 3 br 1.			12 to 18 ins., 8	1.25	10.00	****	in large clusters.		

O. H. PERRY NURSERY CO.

Telephone 5574

McMINNVILLE, TENN.

P. O. Box 545



WAY TO SELL TULIPS WILLIS NEW TULIP DISPLAY BOXES

BULBS IMPORTED FROM HOLLAND

This enormously popular box has been entirely redesigned to make it more attractive than ever.

The size of the box has been increased to hold twenty-five dozen (300) bulbs. The price remains proportionally the same only \$13.50 per box F.O.B. Ottawa.

Holds More Bulbs — More Profit For You Always a Sellout - Don't Delay Ordering

# 25 Dozen (300) FIRST SIZE DUTCH TULIP BULBS

in 6 most popular varieties: Dillenburg, salmon-orange.

The Black Tulip, darkest shade. Princess Elizabeth, pink

Packed in a strong, sunny-yellow display box, beautifully embossed and decorated in bright attention-getting red. Shows up wonderfully in both daylight and artificial light.

COST - \$13.50 per box, F.O.B. Ottawa, Kan.

Bartigon, bright red.

Golden Harvest, yellow.

SELL - \$25.00 to \$30.00 (10c each or as low as \$1.00 per dozen).

MARKUP - 45% to 55% (based on selling price).

White Queen, pure white. DELIVERY -September.

SELLING SEASON - September to December. - Full-color pictures on the box illustrate each PICTURES -

DISPLAY — Just open the box and place on counter, PLANTING INSTRUCTIONS — Enough for every customer. REFILLS — Available to display box customers at \$4.25 per 100, in multiples of 50 of a variety.

Box 91/4x6x20 ins. Takes only 195 square inches of counter space. Send for complete list of bulbs and nursery stock. "Your Wholesale Nurserymen" OTTAWA, KAN.

# THE WILLIS NURSERY CO.

#### NEW ALL-AMERICA GROUP IS ORGANIZED

All-America Chrysanthemum Selections is the fifth and newest All-America organization, established for the preintroductory testing and screening of horticultural varieties of chrysanthemums.

Although the organization was established formally only recently. first year trials of chrysanthemums actually were started the past spring following a preliminary meeting of the group so that chrysanthemum winners may be determined as soon as possible, probably for 1956 introduction.

All types of outdoor, hardy chrysanthemums are eligible in the trials, and any person, firm or institution in the United States or possessions may enter new orginations or prospective introductions in the trials, whether or not they are members of All-America Chrysanthemum Selections.

To enter the 1955 tests it is necessary to dispatch 10 rooted plants to each of the present 10 testing locations. Additional test gardens will be added to represent other climatic and geographic sections as acceptable judges and trial grounds may be chosen. Prospective entrants should

contact the executive secretary, W. Ray Hastings, Box 675, Harrisburg, Pa., for entry application forms, rules and regulations governing the trials procedure and cooperative introduction of award winners.

Officers of the new organization, elected at a recent meeting, are president, Glen J. Davis, R. M. Kellogg Co., Three Rivers, Mich.; vice-president, Carl Lumry, Mount Arbor Nurseries, Shenandoah, Ia., and executive secretary-treasurer, Mr. Has-

The annual meeting of All-America Chrysanthemum Selections will henceforth be held each January at Chicago.

EVANS & REEVES NURSER-IES, Los Angeles, held their fifth annual fuchsia festival at the nurseries at 255 Barrington avenue recently. Among those who served as judges for the most appropriate names for the new specimens were Fred Roewekamp, Dr. Vernon T. Stoutemyer, Raymond Page and Hugh Evans.

GARDEN CITY, Thompsonville, Conn., is a nursery opened the past spring by Edward H. Wojnar. The firm specializes in evergreens, shrubs, fruit trees and shade trees.

# FALL SURPLUS

25 Azalea Canescens. 225.00 150,00 75 Hornbeam, Fastiglate, 3 to 4 ft. Hex Crenata, 15 to 18 ins... llex Crenata Helleri, 475.00 12.00 18 to 24 ins.
Viburnum Carlesi, 3-yr., X.
Viburnum Fragrans,
3 to 4 ft.
Magnolin Lennei Alba,
9 104 ft. 4.00 Cash with order; 25 at 100 rate.

BRIMFIELD GARDENS NURSERY

245 Brimfield Rd. WETHERSFIELD 9, CONN.

NORTHERN COLLECTED EVERGREENS FERNS

SHRUBS WILLIAM CROSBY HORSFORD CHARLOTTE, VT.



#### MEETING CALENDAR

September 17 and 18, Louisiana State Horticultural Association, Nurserymen's Section, Southwestern Louisiana Institute, Lafayette, La.

September 23, fall meeting, Western Pennsylvania Nurserymen's Association, Hotel Webster Hall, Pittsburgh, Pa.

October 1 to 3, Texas rose festival, Tyler, Tex.

November 6 to 8, Florida Nurserymen and Growers Association, trade meet, Fort Harrison hotel, Clearwater, Fla.

November 11 and 12, Holly Society of America, fall meeting, Millville, N. J.

#### TEXAS ROSE FESTIVAL

The 17th floral extravaganza to be held at Tyler, Tex., the annual Texas rose festival, will take place October 1 to 3, with nurserymen promising an outstanding display. The coronation of the rose queen, Joanne Miller, of Tyler, will open the 3-day pageant.

Gov. Allan Shivers will lead the list of notables who, with famous rose fanciers, will join an estimated 200,000 persons expected at the

event.

Highlighting the affair will be a parade, hailed by officials as the biggest in history, which will include 21 rose-bedecked floats and 35 bands. A million rose blooms will be displayed in flower exhibits at the rose show, which will be held at the Garden Center building. The new 1955 All-America roses, Tiffany, Queen Elizabeth and Jiminy Cricket, will be emphasized in rose arrangements.

#### FLORIDA TRADE MEET

The Florida Nurserymen and Growers Association will hold a trade meet November 6 to 8 at the Fort Harrison hotel, Clearwater, Fla.

Landscape displays, designed to demonstrate the tremendous potential uses of many plant materials, will be a feature of the meet. The public will be invited to view the displays on one afternoon.

Jesse Johnson, Seminole Nurseries, Largo, is chairman of the trade meet

committee.

#### PENNSYLVANIA SPEAKER

The featured speaker at the fall meeting of the Western Pennsylvania Nurserymen's Association, to be held September 23 at the Hotel Webster Hall, Pittsburgh, Pa., will be Bert H. Kleinmaier, Burwell Nurseries Co., Columbus, O. His topic will be "Markup and Sales."

# VERMEULEN LINERS

Fall, 1954 - Complete New Catalog on Request

50 at 100 rate - 500 at 1000 rate - Less than 50 add 20 per cent

D.	Each er 100	Each per 1000
ACER PALMATUM ATROPURPUREUM (Japanese Red Maple)		*
2-yr., X, 4 to 6 ins		\$0.18
2-yr., X, 6 to 9 ins	.25	.221/2
2-yr., 24-in. pot, 4 to 6 ins., heavy	.30	.27
AZALEA HINO-CRIMSON, hardy, nonfading		
6 to 12 ins., XX, bed run	.65	.60
AZALEA MOLLIS, true color, orange, red, yellow		
8 to 12 ins., XX	.90	
CORNUS FLORIDA RUBRA (Pink-flowering Dogwood)	10.0	
CORNES FLORIDA RUBBA (Fink-nowering Dogwood)	**	
1-yr., G., X. 6 to 12 ins	.75	2111
CRATAEGUS OXYACANTHA PAULI (Paul's Scarlet Hawthorn)		
2 to 4 ft., X	.90	
ILEX CRENATA (Japanese Holly)	200 00	
2-yr., XX, 6 to 12 ins	.35	
ILEX CRENATA CONVEXA (BULLATA)	**245	* + * 4
The Charles Contract (BULLATA)		
1-yr., 21/4-in. pot	.25	.221/2
3-in. pot, heavy	.35	.321/4
6 to 12 ins., XX, field	.75	
ILEX CRENATA LATIFOLIA (Bigleaf Japanese Holly)		
3-in. pot, heavy	.35	.321/4
ILEX CRENATA ROTUNDIFOLIA (Roundleaf Japanese Holly)	.30	1.00 1/2
The same of the state of the same of the s		****
1-yr., 24-in. pot	.25	.221/2
3-in. pot, heavy	.35	.321/2
ILEX GLABRA (Inkberry)		
3-in. pot	.30	
LABURNAM VULGARE (Golden-chain)	100	43.13
	071/	0.01/
1-yr., S	.071/2	.061/2

#### CALIFORNIA PRIVET

Extra-nice stock—grown on our clay-loam bottom land. Real heavy canes. The 3½ to 4½-ft. plants were cut back spring, 1953 and root-pruned spring, 1954. You should see them—they are READY-MADE HEDGES.

12 to 18 ins., 2 canes.

12 to 18 ins., 2 canes and up.

13 to 24 ins., 3 canes and up.

14 to 24 ins., 3 canes and up.

15 to 24 ins., 3 canes and up.

16 to 25 ins., 3 canes and up.

17 to 25 ins., 3 canes and up.

18 to 24 ins., 3 canes and up.

19 to 4½ ft., 5 br. canes and up. heavy. root-pruned (no shipping)

25 22½

26 22½

27 22½

MAGNOLIA SOULANGEANA (Saucer Magnolia) 3-in. pot, 8 to 15 ins.	as.	
PRUNUS LAUROCERASUS SCHIPKAENSIS (Hardy Laurel Cherry	(1)	
PRUNUS THUNDERCLOUD and VESUVIUS (Purpleleaf Plum)	.40	***
PYRACANTHA COCCINEA LALANDI (Laland Firethorn)	.75	+++
RHODODENDRON ENGLISH ROSEUM, dark rose-pink RHODODENDRON ENGLISH ROSEUM, dark rose-pink		
1-yr., X. from cuttings, soil ball	1,25	4.19
CATAWBIENSE ALBUM, white—F. D. GODMAN, red 2-yr., G., 3½-in, pot, 10 to 15 ins., br	1.85	
RHODODENDRON HYBRID SEEDLINGS, red		
4 to 6 ins. XX. soil ball SYRINGA (French Hybrid Lilae), 21 varieties, single and double, all colors	.30	
1-yr., G., X. 6 to 15 ins., our selection, labeled		.25
1-yr., G., X, 6 to 15 ins., your selection, send for list	.30	

#### TAXUS ROOTED CUTTINGS

7500 or more strong rooted cuttings from sand, 4 to 10 ins. Cuspida'e, capitata (tips), brevifolia, densiformis, intermedia, vermeulen, hatfieldi, hicksi, kelseyi, verticals. Must make room for new lot.

TAKE THEM ALL FOR 868.59 per 1000! (regularly \$95.00 per 1000)

TAXUS CUSPIDATA (CAPITATA)		
9 to 12 ins., XX, S	.50	.45
12 to 15 ins., XX, S	.60	.45
15 to 18 ins., XX, S	.75	
TAXUS CUSPIDATA DENSIFORMIS		
2-yr., X, 5 to 10 ins	.30	.271/
TAXUS MEDIA HATFIELDI (Upright Hatfield Yew)		144.72
2-yr., X, 6 to 10 ins	200	.271/
TAXUS MEDIA VERTICALS, new. Tall, narrow and hardy. Send	Corre	144.55
descriptions. Grandifolia, pyramidalis, robusta, stricta and viri	1101	
the striction of the strict of	CHE.	
2-yr., X, 5 to 10 ins	*****	.32 1/2

#### VERTICAL YEWS - Tall, Narrow, Hardy

1000 or more, twice transplanted, field-grown, now heeled in. 8 to 24 ins. We haven't the time to line these out so here's your chance to save. Flushing, grandifolia, pyramidalis, robusta, strict and viridis. Send for descriptive catalog.

TAKE THEM ALL FOR \$70.00 per 100! (regularly \$75 to \$110 per 100)

THUJA OCCIDENTALIS (American Arborvitae)		
12 to 15 ins. X	.15	.121/4
15 to 18 ins., X	.20	.171/2
TSUGA CANADENSIS (Canadian Hemlock)		
4 to 6 ins., X	.20	.171/2
6 to 8 ins., X	.25	
VIBURNUM DENTATUM (Arrow Wood Viburnum)		
1-yr., S. 6 to 12 ins	.071/2	.06
VIBURNUM DILITATUM (Linden Viburnum)		
1-yr., S., 4 to 6 ins	.06	.04
1-yr., S., 6 to 12 ins. WISTARIA SINENSIS BLUE (Blue Chinese Wistaria)	.07 1/2	.00
1.vr S & to 19 in a strong	021/	- 00

# JOHN VERMEULEN & SON, Inc.



# Pennsylvanians Hold Picnic

By R. P. Meabl

More than 200 nurserymen and their wives attended the summer meeting of the Pennsylvania Nurserymen's Association held at Musser Forests, Indiana, Pa., Tuesday, Au-

The meeting was essentially an outing for fellowship and recreation. Fred and Dorothy Musser and their entire staff went all out to see that everyone had a good time. The day was spent in touring the extensive plantings and inspecting the young stock, propagating units and other features of the company. Boating and swimming in a 35-acre lake were also enjoyed by many.

At noon a sumptuous box lunch was served in the packing building and the evening banquet was held at the Eagles' home, at Indiana.

President Pennsylvania President Albert F. W. Vick, Vick's Wildgarden, Gladwyne, presided at a brief business meeting. John M. Eisler, Eisler's Nurseries, Butler, reporting on the American Association of Nurserymen's recent meeting, said there were plans to raise the minimum national dues from \$15 to \$25 but he stressed the importance of belonging to A. A. N. and gave assurance that all members receive many times the value of the dues from membership.

Jesse R. S. Flory, P. N. A. vice-president, LaBars' Rhododendron Nursery, Stroudsburg, gave a report on the National Landscape Nurserymen's Association meeting, held with that of the A. A. N. in July. He told of the educational meetings and the round-table discussions, emphasizing those on polyethylene in the packing of nursery stock and the selling of nursery material. One of the points brought out was the need for smaller plants to use in modern landscape design.

#### Merger Plans Progress

Reporting for the merger committee, Louis E. Wissenbach, Squirrel Hill Nursery, Pittsburgh, told of the many meetings which the committees of the P. N. A. and the Western Pennsylvania Nurserymen's Association have held during the past two years. They found no great differences between the two organizations and those that were found have all been worked out so that it is expected the merger of the Pennsylvania association and the Western Pennsylvania association will be completed by February of next year.

Robert Hood, Thomas B. Meehan Co., Dresher, chairman of the public relations committee, urged the use of the metal "Plant Pennsylvania" signs which can be attached to company trucks and cars.

Al Vick explained the composition of the Horticultural Council. It is made up of representatives of all the horticultural industries of the state, and its function is to advise and counsel with the department of horticulture of Pennsylvania State University to bring about the most effective utilization of the university's services to Pennsylvania horticulture.

The place and dates of the winter meeting were announced as York. Pa., February 9 and 10, 1955.

JOINT winners of the 1954 national award for outstanding research in floriculture given by the Society of American Florists and the Foundation for Floriculture are Dr. Max E. Brunk, professor of marketing in agricultural economics at Cornell University, and Robert Hampton, assistant in the department.

HOWARD DOMAN, Willis Nursery Co., Ottawa, Kan., is recuperating from a broken foot suffered when he fell off a ladder while painting during his recent vacation. He has remained on the job in spite of his handicap.

### **GUARANTEED-TO-LIVE** TRANSPLANTED EVERGREENS

	Per 1000
American Arborvitae, 4-yr, transplants, (2-2), 4 to 8 in	\$65.00
Balsam Fir, 4-yr. transplants, (2-2), 4 to 6 in	65.00
Austrian Pine, 3-yr. transplants, (2-1), 3 to 5 in	
Red Pine, 4-yr, transplants (2-2), 4 to 10 in	
Red Pine, 3-yr. transplants (2-1), 3 to 5 in	
Scotch Pine, 4-yr. transplants, (2-2), 5 to 10 in	60.06
Norway Spance 4 ve transplants (2-2) 4 to 8 in	

#### SEEDLINGS

(Not Guaranteed)
Austrian Pine, 3-yr. seedlings (3-0) 5 to 10 in
Red Pine, 3-yr. seedlings, (3-0), 5 to 8 in
Scotch Pine, 3-yr, seedlings, (3-0), 8 to 10 in
White Pine, 3-yr. seedlings, (3-0), 4 to 6 in
Black Hill Spruce, 3-yr. seedlings, (3-0), 4 to 10 in
Colorado Blue Spruce, 3-yr. seedlings, (3-0), 3 to 5 in
Norway Spruce, 3-yr. seedlings (3-0), 3 to 6 in
White Sames 2 we coddings (2.0) 4 to 8 in

#### **TERMS**

Cash with order; or one-half cash with order, balance C.O.D. All prices F.O.B. Fryeburg, Maine, net; no discounts. 250 trees of any one kind and size at the 1000 rate. For less than 250 of one kind, ask for retail price list. No extra charge for boxes or packing.

#### **OUR GUARANTEE**

90 per cent of all transplants sold at regular wholesale prices as quoted in this list are guaranteed to live. Re-placements will be made free of charge for any losses in excess of 10 per cent of the number purchased, provided we are notified of such losses by October 1, 1955. (Seedlings not guaranteed.)

We believe that we grow and ship more transplanted evergreen trees than any other privately owned nursery in the country. Several other varieties of transplants available. Send for complete list of



WESTERN MAINE FOREST NURSERY CO.

DEPT. AN-934

FRYEBURG, MAINE

"A friendly, efficient sales service"

#### E. D. ROBINSON SALES AGENCY

38 S. Elm St. P. O. Box 247 WALLINGFORD, CONN.

Representing

Adams Nursery, Inc. Bristol Nurseries, Inc. Barnes Bros. Nursery Co., Inc. The Cheshire Nursery, Inc. Maxwell, Bowden & Rice, Inc. A. N. Pierson, Inc. Sunny Border, Inc.

Please refer to our ad in the July 15 issue for choice liners.

# SHADE TREES

Nursery-Grown

We have available some of the Best-Grown Trees in the east, in large

quantities. QUERCUS palustris, 3 to 31/2-in. and 4 to 5-in. cal.

GLEDITSIA triacanthos, 3 to 3½-in. 4 to 5-in. 5 to 6-in. and 6 to 8-in. cal.

PLATANUS accrifolia, 2 to 2½-in. 2½

to 3-in. and 3 to 3½-in. cal.

ACER platanoides, 2 to 2½-in. and 4 to

5-in. cal.

PINUS migra, 4 to 5 ft. and 5 to 6 ft.

PINUS strobus, 8 to 10 ft., 10 to 12 ft.
and 12 to 14 ft.

PINUS ricinosa, 8 to 10 ft., 10 to 12 ft.
and 12 to 14 ft.

MALUS, in variety. 6 to 8 ft. and 8 to 10 ft.

FRENCH HYBRID LILAC, 4 to 5 ft. For quotations, mail us your want list. Your inspection invited.

#### NORLEY NURSERIES GARDINER, N. Y.

Telephone: New Paltz 2596

# POLYETHYLENE FILM FOR GREENHOUSES

Polyethylene, the plastic material now being used in propagation and as a plant wrap, is gaining recognition as a material for greenhouses. It has been found entirely successful both as an external covering for temporary greenhouses and an inner insulating barrier for existing glass greenhouses. In both cases, it has cut growing costs significantly.

With polyethylene as an outer covering, greenhouses are built over economically constructed temporary wooden frames for protection of plants during that part of the growing season when the weather is likely to become inclement. Users of this application report that the film transmits solar heat as well as glass, is easier to heat than glass and retains heat better. When plant protection is no longer needed, the greenhouse can simply be dismantled

Excellent results obtained from using polyethylene as a greenhouse liner are reported by Ritter Gardens, Brielle, N. J. In the Ritter greenhouses, the film is in 108-inch sheets clamped together and covering the interior wall and ceiling space. Between four and six inches of dead air space is allowed between film and glass to provide an insulating barrier.

After lining greenhouses with some 75,000 square feet of polyethylene film, the firm cut heating costs by 25 to 30 per cent. The polyethylene film-equipped greenhouses require less fuel to raise the temperature. In fact, addition of the film raises the temperature by three degrees even in an unheated greenhouse. Plant shock was reduced because of the dead-air insulation barrier which provides a heat cushion eliminating a precipitate temperature drop at sundown.

Superior humidity retention reduced plant watering by as much as 50 per cent. This resulted in a savings in labor costs and water bills, improved plant growth and a significant saving in fertilizer cost effected by the fertilizer's not being washed away by continuous watering.

VAUGHAN'S SEED CO. 1954 spring flowering bulb catalog was distributed as part of the Chicago Sunday Tribune on August 29. Six full color pages were included in the 16-page, tabloid-size catalog presented as a special additional magazine section of the Tribune.

# **POTTED LINERS**

	0	0
	Per 100	Per 1000
Taxus media Adams, 1-yr., 21/4-in. r. pots, 4 to 6 ins		\$150.00
Taxus media andersoni, 1-yr., 21/4-in. r. pots, 4 to 6 ins.	16.00	150.00
Taxus media andersoni, 2-yr., 21/4-in. r. pots, 6 to 12 ins.	22.50	200.00
Taxus media browni, 1-yr., 21/4-in. r. pots, 4 to 6 ins	18.00	160.00
Taxus cusp. capitata S., 3-yr., 21/4-in. r. pots, 3 to 6 ins.		200.00
3-yr., 21/4-in. r. pots, 4 to 8 ins.	27.50	250.00
3-yr., 21/2-in. r. pots, 6 to 12 ins	30.00	275.00
Taxus media capitata, c.g.,		
1-yr., 21/4-in. r. pots, 4 to 6 ins.	20.00	180.00
Taxus cuspidata, 1-yr., 21/4-in. r. pots, 4 to 6 ins	16.00	150.00
Taxus cuspidata, 2-yr., 21/4-in. r. pots, 6 to 12 ins	22.50	200.00
Taxus media hatfieldi No. 18,		
I-yr., 21/4-in. r. pots, 4 to 6 ins.	20.00	180.00
Taxus media hatfieldi, 2-yr., 21/4-in. r. pots, 6 to 12 ins.	25.00	225.00
Taxus media hicksi, 1-yr., 21/4-in. r. pots, 4 to 6 ins	16.00	150.00
Taxus media hicksi, 2-yr., 21/4-in. r. pots, 6 to 12 ins	22.50	200.00
Taxus intermedia, 1-yr., 21/4-in. r. pots, 4 to 6 ins	16.00	150.00
Taxus media Moon's, 1-yr., 21/4-in. r. pots, 4 to 6 ins	16.00	150.00
Taxus media Moon's, 2-yr., 21/4-in. r. pots, 6 to 12 ins.	22.50	130.00
Taxus media thayerae, 2-yr., 21/4-in. r. pots, 6 to 12 ins.		200.00
Taxus cuspidata vermeuleni,		200.00
2-yr., 21/4-in. r. pots, 6 to 12 ins.	25.00	
Taxus media wardi, 1-yr., 21/4-in. r. pots, 4 to 6 ins	22.50	200.00
Taxus media wellesleyana,		
1-yr., 21/4-in. r. pots, 4 to 6 ins.	20.00	
Juniperus Andorra compacta,		
1-yr., 21/4-in. r. pots, 4 to 6 ins.	16.00	150.00
Juniperus communis depressa aurea,	20.00	100.00
1-yr., 21/4-in. r. pots, 4 to 6 ins.	20.00	180.00
Juniperus glauca hetzi, 1-yr., 21/4-in. r. pots, 4 to 8 ins.	20.00	180.00
Juniperus fastigiata, Irish, I-yr., 2 <sup>1</sup> / <sub>4</sub> -in. r. pots, 4 to 6 ins.	20.00	
Juniperus chinensis pfitzeriana glauca,	20.00	
I-yr., 2 <sup>1</sup> / <sub>4</sub> -in. r. pots, 4 to 6 ins.	27.50	250.00
1-yr., 21/4-in. r. pots, 4 to 6 ins.	25.00	225.00
2-yr., 21/4-in. r. pots, 6 to 8 ins.	35.00	300.00
Thuja occidentalis elegantissima,		
1-yr., 21/4-in. r. pots, 4 to 6 ins.	18.00	160.00
Thuja occidentalis pyramidalis,		
1-yr., 21/2-in, r. pots, 4 to 6 ins.	16.00	150.00
Thuja occidentalis wareana (Siberian),		150.00
1-yr., 21/4-in. r. pots, 4 to 6 ins.	16.00	150.00
Thuja occidentalis woodwardi,	14.00	150.00
1-yr., 21/2-in. r. pots, 4 to 6 ins.	16.00	150.00
Ilex crenata bullata, 1-yr., 21/2-in, r. pots, 4 to 6 ins Ilex crenata hetzi, 1-yr., 21/2-in, r. pots, 4 to 6 ins	22.50	200.00
llex glabra, I-yr., 21/2-in. r. pots, 4 to 6 ins.	20.00	180.00
llex crenata rotundifolia.	20.00	100.00
1-yr., 21/2-in. r. pots, 6 to 8 ins.	22.50	200.00
Ilex crenata Stokes Pat. 887,		
2-yr., 21/4-in. r. pots, 2 to 4 ins.	35.00	300.00
- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		

The above only a partial list of our potted lining-out stock. We also grow seedlings and field liners. A complete catalog on request.

#### **HEASLEY'S NURSERIES**

Freeport Rd.

**BUTLER, PA.** 

On their own roots

# RHODODENDRON LINERS

We are prepared to produce for you compact, beautifully branched, 10 to 12-in., hybrid rhododendron liners in all varieties, including the hard-to-root reds. These plants with root balls 6 to 8 ins. in diameter need no coddling. They are ready for lining out in the field where they will quickly grow into bushy, salable stock.

Using your cutting wood, we will stick the cuttings this fall and have your liners ready for delivery September I, 1955. Let us know your requirements as soon as possible. Our propagating facilities are not unlimited. Prices as follows:

																Each
500 to	0001									*			×	·		\$0.70
1000 to	3000						*	,	×						*	.65
3000 to	5000		×		*	,						*		×	*	.60
5000 to	00,00	0														2.5
Over I	0.000															.50

### RANDOLPH NURSERY

89 Babylon Turnpike

MERRICK, L. I., N. Y.



We have one of the largest available supplies of big specimen material, including:

#### **ILEX OPACA**

- . TSUGA CANADENSIS
- . GINGKO BILOBA · AZALEA
- . ILEX BUXIFOLIA
- TAXUS FASTIGIATA
- . TAXUS REPANDENS . TAXUS CUSPIDATA
- . HYBRID RHODODENDRON

For 36 years one of America's leading nurseries



7817 York Road Towson 4, Md.

NURSERIES

### PRIVET and BERBERIS

Splendid Stock Write for Special Quotations

LESTER C. LOVETT MILFORD DELAWARE

# New York Arborists **Hold Summer Meet**

Approximately 45 New York arborists and their families attended the summer meeting of the New York State Arborists' Association, at White Sulphur Springs hotel, on Saratoga lake, New York, August 5 and enjoyed an excellent meeting, planned by Basil Jackson and his

program committee.

Brunch at 10 a. m. started the events in good order and was followed by a series of demonstrations during the afternoon. Power saw exhibitions delighted the young, future arborists. The power tool demonstration proceeded smoothly, and A. C. Lamb took a tree down and off the road just as a shower came across the lake to send folks indoors for the summer meeting

President Francis Larmore, United Tree Service, Inc., Schnectady, introduced the members of the executive committee, Dewhirst Wade, Ira Wicks, Paul Crandall, Kenneth Painter and Dan Clower, substituting for Prof. George Matthysse, secretary-treasurer.

The objectives of the arborists for 1954 reviewed by Mr. Larmore were (1) to prepare legislation toward the licensing of professional arborists in New York; (2) to obtain at least 25 new members during 1954; (3) to locate the largest American elm in New York.

Mr. Wicks reported 10 new members and nine additional applications. The association then acted on the new applications, which brought the number of new members close to the expected total of 25.

The committee on finding the largest American elm gave a progress report. An entry blank was proposed and accepted, so that copies are now available for reports on likely trees. The first person reporting a specific tree and furnishing trunk circum-ference at four and one-half feet from the soil level will be considered the finder of the desired tree. The closing date of the research will be December 15, and winners in each county, as well as the state winners, will be announced at the winter meeting. Three entries are already in and include the Johnstown elm, at Johnstown, N. Y.

The major business centered on a discussion of the proposed act to license arborists operating in New York. Progress has been made, and, while some phases will still need rewording or phrasing, general agree-

### HEAVY **EVERGREEN LINERS**

Beds, twice transplanted, pruned, bushy:

2000 Spreading Yew, 12 to 15 ins. 2000 Vermeulen Yew, 10 to 15 ins.

\$55.00 per 100; \$500.00 per 1000 Field, three times transplanted.

sheared, pruned, very bushy:

1500 Spreading Yew, 12 to 18 ins. 400 Vermeulen Yew, 12 to 18 ins.

300 Kelsey Yew, 12 to 18 ins. 750 Hatfield Yew, 12 to 18 ins.

500 Hicks' Yew, 12 to 18 ins.

250 llex convexa, 10 to 15 ins. 500 Hemlock, 18 to 24 ins.

\$12.50 per 10; \$95.00 per 100

Prices F.O.B. northern New Jersey. Truck pickups can be arranged. Packed free for cash with order.

#### **KELSEY NURSERY SERVICE**

(Est. 1878) HIGHLANDS, N. J.

LANDSCAPING SIZES Colerado Blue Spruce, excellent shape, many good shiners, 2½ to 7 ft., B&B, \$2.00 per ft. Pyramidal Arbervitae, sheared and compact, 3½ to 7 ft. B&B, 80e per ft. Azales Mollis (Red Flame), 9 to 24 ins. Also Pfitzers, Yews, Hemicoks.

SYLVANIA NURSERY & PEAT CO. Rt. 351 NEW GALILEE, PA.

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ment was accorded to the present version, by Dewhirst Wade. Those attending the summer meeting favored proceeding with the proposal.

The meeting adjourned shortly before dinner. Mr. Lamb continued his equipment demonstration with a wood chipper. Disposal of pruning wood is a definite problem, and the wood chipper proved of interest to the group.

After a delicious meal, the group saw two movies on ticks and identified samples of slippery elm and American elm twigs. The formal program concluded at about 8 p. m., with many remaining to enjoy the attractions of Saratoga lake.

A. M. S. P.

#### CHART PROVES SALES AID

Wayside Nursery, Indianapolis, Ind., is supplying free of charge a landscape planning chart to aid homeowners doing their own landscaping. The chart has proved an aid to sales as it enables customers to recognize their plant material needs. It is directed particularly to the middle-class homeowner who is cost-conscious.

The chart is standard 10-line graph paper mounted on 20-pound corrugated paperboard and bound with masking tape to form an improved drawing board. An insert carries simple instructions for laying out the premises under consideration. By letting each light line represent one foot and each heavy line 10 feet, homeowners can easily plot the buildings, drives and other permanent installations on their property to scale.

The homeowner is advised to take this sketch for consultation to his favorite nursery, preferably Wayside, where a nurseryman will sketch in with soft pencil his suggestions after acquainting himself with the customer's preferences. In practice it has been found that homeowners usually do not purchase all of their landscaping material immediately, but come back several times during the season, bringing their landscape planning charts along.

#### ASH TREES FOR LAWNS

Reconsidering the ash trees as possibilities for street and shade planting, the August issue of the bulletin of popular information of the Morton Arboretum, Lisle, Ill., describes several small south European and western Asiatic species of fraxinus, growing at the arboretum though still in immature stages.

# DO YOU HAVE STOCK TO SELL?

**Supply Short** 

Another summer of dry weather, less severe in eastern areas but of drought proportions in the southwest, has hampered the production of nursery stock this season.

Some growers will be able to fill orders only on a pro rata basis, and their customers are looking for other sources to supplement their supply.

**Demand Strong** 

Home building, continuing at a high rate, supports the strong demand for nursery stock that has been experienced in recent seasons.

Consumer buying has shown no decline in the face of business adjustments in some areas, and autumn is expected to show an upturn in general trade activity.

Gardening interests a greater number of people than ever before, and their purchases of plants increase from season to season.

**Market Ready** 

If you have a specialty crop or a general line of stock for wholesale, you can turn into cash any part of it not already booked on orders. The American Nurseryman reaches nearly 9,000 trade buyers (paid subscribers). The cost of reaching them depends on the quantity of stock you have to sell, thus:

(1) Your complete price list can be published in one page or two or more pages, depending upon the number of items, at \$120.00 per page (less on term orders). Reprints can be supplied at cost for your mailing list or to answer inquiries.

(2) Specialty items or a short list can be offered in display advertising space—from I inch upwards—at \$4.00 per column inch per insertion (less on term orders).

(3) Staple items can be listed under suitable headings in the Classified advertisements at 35 cents per line (6 average words) per insertion. Note the increase in pages of these "liners" from issue to issue because trade buyers look them over to find their wants.

**Prompt Action** 

Mail your advertising copy now. You will receive orders from the American Nurseryman pages before you can prepare, plan, print and mail a circular—and the cost is much less!

Forms for the October 1 issue will be open until September 17 (classified ads until September 20).

Mail copy early—don't miss the big issue of autumn.

# American Nurseryman

343 S. Dearborn St.

Chicago 4, Ill.

# 15,000 SPREADING AND UPRIGHT YEWS

TAXUS CUSPIDATA CAPITATA	TAXUS CUSPIDATA
(Japanese Upright Yew)	(Japanese Spreading Yew) 15 to 18 in \$2.50
18 to 24 in., regular \$2.50	18 to 24 in 3.00
2 to 21/2 ft., slender 2.50	TAXUS HICKSI
2 to 21/2 ft., regular 2.75	15 to 18 in \$2.25
21/2 to 3 ft., slender 2.75	18 to 24 in 2.75
21/2 to 3 ft., regular 3.50	2 to 21/2 ft 3.25
3 to 31/2 ft., slender 3.50	All stock has been treated
3 to 31/2 ft., regular 4.00	and can be shipped outside
3 1/2 to 4 ft., slender 4.75	the Beetle zone.
31/2 to 4 ft., regular 6.00	Prices F.O.B. Our Nurseries
4 to 41/2 ft., slender 6.75	All stock sheared in
4 to 41/2 ft., regular 8.00	spring or summer of 1954.

Telephone Fieldstone 7-3382

# **WOODBOURNE CULTURAL NURSERIES, INC.**

Office: 1200 Union Turnpike NEW HYDE PARK, N. Y. Nurseries: Colonial Spring Rd. MELVILLE, L. I., N. Y.



#### HARDY ILEX OPACA

We have choice named varieties which have been widely used by many eastern nurseries. Root-bound holly liners out of 3-in, pots or deep soil cans, from 6 to 10 ins. high. Also rooted cuttings. Ilex Cornuta Burfordi. Franklinia root-ed cuttings. Arctostaphyloa (Bearberry), out of 3-in. pots.

Taxus (varieties), 1 and 2-yr.
We guarantee true to name and a reliable year-after-year source.

WILT FOR CATALOG

WRITE FOR CATALOG

HOLLY HAVEN, INC., Elizabeth C. White, Pres. WHITESBOG B, N. J.

### ORNAMENTAL **EVERGREENS**

Trees and Shrubs

**BAGATELLE NURSERY** 

P. O. Huntington Station, N. Y.

## CHINESE CHESTNUTS

Hemming Strain Blight-Resistant Trees

Seed \$1.25 per lb.

\$100.00 per 100 lbs.

Per 10 Per 100 Per 1000 12 to 18 ins \$2.50 \$22.50 \$200 18 to 24 ins. 3.50 32.50 300 2 to 3 ft. 6.00 55.00 3 to 4 ft. 7.50 70.00 500 650

Write for Trade List

EASTERN SHORE NURSERIES, INC.

Box 743

EASTON, MD.

#### QUALITY MERCHANDISE AT REASONABLE PRICES

#### VANDERBROOK NURSERIES

MANCHESTER, CONN.

Wholesale Nurserymen Since 1922

#### NEW PEACH DEVELOPED

Redglobe, a new peach variety, has been developed by the United States Department of Agriculture in cooperation with state and federal experiment stations and has been released for propagation by nursery-

High-colored, firm-fleshed peaches are often hard to obtain from vigorous-growing trees, especially with trees under the irrigation systems common to western growing areas. Agricultural research service horticulturists report that Redglobe gave particularly good results when tested in California and Washington. The new variety also showed promise in experiments in Texas and Michigan.

Redglobe's medium to large peaches have the bright, attractive color which is popular with consumers. About three fourths of the skin surface is covered with a bright red blush over a yellow background.

The flesh is firm, fine textured and of good flavor. Its firmness makes long-distance shipment practical and enables fruit to stand up longer under storage.

Redglobe trees are productive and vigorous with large, self-fertile blossoms. The new peach is suitable for areas where the Elberta peach is grown. It requires about the same winter temperatures as Elberta, but ripens about 15 days earlier. Redglobe is moderately susceptible to bacterial spot diseases, as is Elberta.

Growers and nurserymen interested in propagating Redglobe should write to Leon Havis, U. S. D. A. Plant Industry Station, Beltsville, Md., for information on budwood sources.

#### CLEAN EQUIPMENT MEANS BETTER PEST CONTROL

More pest control failures are caused by faulty application than by insect resistance or inferior chemicals, according to Leland G. Merrill, Jr., extension specialist in entomology at Rutgers University. Mr. Merrill recommends careful cleaning to keep equipment most effective.

He suggests that a duster be cleaned by first removing all dust from the hopper, distributor, fan, tubes and nozzles. A few handfuls of dry sand tossed into the suction side of the fan will clean out stubborn particles. A protective coating of oil should be applied by tossing a mixture of kerosene with one-tenth part burnt oil into the suction side

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# SHADE'S Central Pennsylvania Grown ROSES

2 years old, field-grown plants

# Fall, 1954 — WHOLESALE PRICE LIST — Spring, 1955

Place Your Order Now for Fall or Spring Delivery

#### PRICES ON ALL STANDARD ROSES

No. 1 ... 50c EACH No. 11/2 ... 40c EACH

TWO-TONE COUNTESS VANDAL, Pink, copper, gold

TEXAS CENTENNIAL, Vermilion-red and

CRIMSON GLORY, Deep velvety and crim-

son.
AMI QUINARD, Velvety crimson-maroon.
POINSETTIA, Bright scarlet.
McGREDY'S SCARLET, Scarlet-red.

YELLOW
ECLIPSE, Longbud and rich gold.
SOEUR THERESE, Double and rich yellow.

PINK
MME. COCHET-COCHET, Coppery-pink and

reflected gold.

BETTY UPRICHARD, Salmon-pink.

EDITOR McFARLAND, Brilliant pink.

K. A. VICTORIA, Snowy-white and double. FLORIBUNDA
POULSEN BEDDER, Clear, rich pink.
RED RIPPLES, Carmine-red.

CLIMBING ROSES
BLAZE, Bright red. BLAZE, Bright red. DOUBLOONS, Clear golden-yellow. CITY OF YORK, Creamy-white.

#### BROWNELL SUB-ZERO HYBRID TEA

A new race from hardies species. Wichurian hybrids, that can bloom all summer along with the more tender hybrid teas. The originator reports flowers of equal merit in size, form, fragrance and color and plant many times longer lived even after sub-zero many times longer lived even after sub-zero

winters.			KAR	90	•	*		cu	even.	CEALCE D	MIN-MCI
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CURLE	V PI	NI	K.						Each	per 10	per 100
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No.	1			* *					81.00	80.90	80.85
No.	116								.80	.72	.68

PINK PRINCESS Pat. No. 459—Retails \$1.75 each Bud red, flowers deep pink. | Ruo Per | No. 1 | No

No. 1½ ... .80 .72

RED DUCHESS
Pat. No. 846—Retails \$1.75 each
Hardy, rose-red flowers, fragrant.
No. 1 ... 1.00 ... 90
No. 1½ ... .80 ... 72

PATENTED ROSES

We offer these roses under license from patent owner. It is understood and agreed that they are for sale at retail only, at or above prices specified. 10 to 20 of one variety at 10 rate; 20 to 250 of one variety at 100 rate; 250 and up of one variety at 1000 rate. Prices are net.

Each 10 100

BLANCHE MALLERIN
Pat, No. 594—Retails \$2.00 each
Pure white, fragrant.
No. 1
No. 1 \$1.25 \$1.10 \$1.00
No. 1½ ... 88 .80 DR. DEBAT Pat. No. 961—Retails \$2.00 each Medium pink.

GOLDEN ANNIVERSARY Pat. No. 806—Retails \$1.77 Old gold color, flushed apr No. 1 75 each

| No. 1 | 1.15 | No. 1.15 | No. 1 | 1.15 | No. 1 |

Pat. No. 934—Retails \$2.50 each Pearly-pink and white. No. 1

No. 1½ 1.12 1.00 COCORICO—Floribunda Pat. No. 1193—Retails \$2.00 each Flashing scarlet. 1.25 1.10 1.00 No. 1 1.25 1.88 .80 

WRAPPED ROSES 15c each above cost of individual rose. Attractively packed in distinctive yellow, red and blue waterproof bags, tops paraffine waxed. Beautiful full-color picture label and planting suggestions appear on each bag.

**FVERGREENS** Landscape Material
Twice Transplanted—Regularly Sheared
No Boxing or Shipping
Terms: Cash, B&B at the Nursery
Each

1500 Juniperus Excelsa Stricta 24 to 30 ins. 4.00 1200 Taxus Media Hicksi 18 to 24 ins..... 3.50 Thuja Occidentalis Elegantissima 700 Thuja Occidentalis Globosa 2.50 15 to 18 ins. 2.75
500 Thuja Occidentalis Pyramidalis
36 to 38 ins. 3.00

#### YOUNG SALABLE EVERGREENS

Grown three years in 15-inch rows planted 5 inches apart, under irrigation. Splendid oung salable evergreens for the cash-and-arry trade of garden shops, roadside mar-ets and nurseries.

500	Thuja Occidentalis Pyramidalis 24 to 30 ins.	1 20
1500	Thuja Occidentalis Pyramidalis	1.50
25.00	30 to 36 ins	2.50
2500	Juniperus Chinensis Pfitzeriana 12 to 15 ins.	1.25
1500	Juniperus Excelsa Stricta	
-	12 to 15 ins	1.25
3000	Juniperus Glauca Hetzi	1 100
6000	12 to 15 ins	1.20
0000	8 to 10 ins	1.25
5000	Taxus Cusp. Intermedia	
	8 to 10 ins	1.25
4000	Taxus Media Hicki	1.00
2500	Thuja Occidentalis Elegantissima	1.00
	18 to 20 ins	1.50
1500	Thuja Occidentalis Globosa	
	10 to 12 ins	1.00
1500	Thuja Occidentalis Wareana 18 to 20 ins	1.50

SHIPPING—We request customers to give definite shipping instructions regarding man-ner in which they wish goods shipped. In the absence of special instructions we use our best judgment, but without assuming respon-sibility. All shipments travel at risk and expense of purchaser. Terms and Conditions of Sale: Cash with order; packing at cost. Please order in multiples of 10 plants only.

#### SHADE'S NURSERY

4907 Orchard St. Phone-Harrisburg 5-5417 HARRISBURG, PA.

5 Miles East of Harrisburg on U. S. Route 22

Member Pennsylvania Nurserymen's Association - American Rose Society

of the fan. This can be cleared in the spring by tossing sand into the suction side.

A sprayer will last longer and operate better if it receives fall cleaning. The hose should be removed and drained, and the ends should be plugged to keep out small animals. Nozzles and screens should be removed, cleaned in gasoline and stored in a bag attached to the sprayer. The pump should be drained, dried, oiled and stored in a dry

### LINING-OUT STOCK

IN WIDE ASSORTMENT

Hardy Azaleas, Pink Dogwood, Jap. Red Maples, Old English Boxwood, Lilacs (French Hyb.), Evergreens, etc., in 1, 2 and 3-yr. transplants, at competitive prices. Write for list.

#### DEERFIELD NURSERIES

DEERFIELD STREET P. O., N. J.

#### *FOR 52 YEARS*

Our business has been growing

Rhododendrons Azaleas Perennials, Roses All Nursery Items

BOBBINK NURSERIES, INC. 586 Paterson Ave. E. RUTHERFORD, N. J.

# PIERIS Japonica

(Andromeda)

The popularity of this plant is ever increasing, creating a demand that only few nurseries can supply. The plant sells on sight and its extensive use at flower shows increases the desire of plant lovers for it. It transplants easily, will grow in sun or shade and is attractive at all seasons.

Starting just with its lovely Lily-of-the-Valley-like flowers, often in bloom with icicles on them, it sometimes remains in bloom for a month. The new red foliage appears which turns light then dark green. The prominent racemes of light green flower buds form in the fall and are attractive all through the winter, useful in flower arrangements and can be readily forced.

The plants can be moved into beds now and often make three growths a year, so that you soon have a beautiful salable Pieris. Dug with small balls of earth surrounding them, they are incomparable for an evergreen planting. Our grading is very liberal.

				Per 100
4	to	6	îns.,	T\$15.00
6	to	8	ins.,	TT 20.00

# **ILEX BULLATA**

6 to	8 ins., 2-yr., T	15.00
8 to	10 ins., T	20.00

Send for List of Unusual Plants

# ALANWOLD NURSERY

NESHAMINY, Bucks Co., PA.

#### SOUTHERN MEETING

[Continued from page 11]

growing in fields, some treated and some untreated with Crag herbicide. Over 150 species of ornamental plants were treated, with few found susceptible. This type of herbicide, used often for pre-emergence control, must be sprayed on land which is cleanly cultivated, he said. Its action kills small plants as they grow from seeds.

Horticulturists taking part in the weed control research were Dr. James A. Foret, professor of horticulture at Southwestern Louisiana Institute; Dr. Ray Self, of Alabama Polytechnic Institute, and Dr. L. C. Chadwick, of Ohio State University.

The speaker challenged the group to try chemical weed killers. He predicted a great saving in labor costs, with 20 men able to do work which required from 40 to 60 before use of the weed killers.

Dr. E. W. McElwee, of the University of Florida's agricultural extension service, who spoke Monday morning, said that Floridians spend considerably more per year for plants than do persons in other parts of the country.

"Seventy per cent of all flower production in Florida is out in the open, either under lath, cloth or in the open field," he said. "There are over 18,000 acres in nursery and flower crops, with 1,250,000 square feet of grass, most of which is for propagation."

Dr. McElwee said he thought local nurserymen might increase the sale of nursery plants by putting on home improvement drives.

In summarizing the work of his extension service, he said, "Our program is designed to push Florida ornamentals, grow a better product and have it used in any way we can."

#### Marshall Speaks for A. A. N.

Vernon Marshall, of Arlington, Neb., vice-president of the American Association of Nurserymen, complimented the Southern association on its fine record of service to members and explained the work of the A. A. N. at the Tuesday morning session.

"The government is too big and too complicated to listen to individuals any more," he said. "It has a healthy respect for representatives of organized business, and our association is no exception."

Mr. Marshall discussed the fair trade practice rules, the first conference on which was held August 11, at Chicago and the second September 13, at San Francisco. The

#### SPECIMEN LANDSCAPE MATERIAL

Fine blocks of:

Arborvitae — American, Spiralis, Elegantissima, Ware and Globe, 2 to 12 ft.
Hemlock, 3½ to 7 ft.
Ilex Convexa, 1½ to 3½ ft.
Magnolia Lennei, 5 to 8 ft.
Magnolia Soulangeana, 3 to 7 ft.
Pieris Japonica, 1½ to 3½ ft.
Pink Dogwood, 4 to 6 ft.
Spreading Yews, 1 to 7 ft.
Upright Yews, 2 to 7 ft.

We most cordially invite you to visit us and inspect these and other materials.

#### **ANGELICA NURSERIES**

Growers of Fine Plants 3 mi. South of Reading, Pa., on Rt. 73, R. D. I MOHNTON, PA.

# **BENCH CUTTINGS**

P	er 100	Per 1000
Juniper, Irish	\$10.00	\$ 90.00
Retinospora Pisifera Plumosa	10.00	90.00
Taxus Cuspidata Spreading	10.00	90.00
Taxus Cuspidata Upright,		
tips	11.00	100.00
Taxus Media	10.00	90.00
Taxus Media Brevitolia	10.00	90.00
Taxus Media Brevifolia		
Nana	10.00	90.00
Taxus Media Hatfieldi	9.00	80.00
Toxus Media Hicksi	10.00	90.00
Taxus Media Densiforma .	10.00	90.00
Thuig Occidentalis		
Compacta	12.50	110.00
Thuja Occidentalis Globosa		
Nova	12.50	110.00
Thuja Occidentalis Nigra	11.00	100.00
Thuja Occidentalis Parsons		
Globe	10.00	90.00

#### GROWERS

BROUWER'S NURSERIES

NEW LONDON, CONN.

EVERGREEN TREE LINING-OUT STOCK For Fall, 1954

SUNCREST EVERGREEN NURSERIES
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#### BOULEVARD NURSERIES Newport, R. I.

Quality Nursery Stock
 Lining-Out Stock
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Taxus, Ilex and other Ornamentals.
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third is set for September 28, at New York. "After these industrywide conferences are over, the federal trade commission will then take over and study the records of the proceedings along with the recommendations of the industry committee and then will itself put out a statement as to a final set of rules which will be again discussed by the industry at a later date," Mr. Marshall explained.

He also spoke of recent court action in two cases involving falacious and unfair advertising in which the A. A. N. was active and mentioned the "Plant America" program with emphasis on the industrial landscaping competition. He declared that the competition was "one of the most outstanding and successful product promotion programs that any trade association has ever attempted, including the multimillion-dollar program of the American Meat Institute."

A breakfast was given Tuesday morning for A. A. N. members.

#### Women's Activities

Many of the nurserymen brought their wives to the convention, and several separate functions were planned for their entertainment. They attended the Sunday night cocktail party, had luncheon Monday noon in the hotel's Camellia room (this glamorous room was much approved of by the nurserymen who raise camellias), received orchid corsages at the banquet and dance Monday evening, enjoyed a separate trip through the naval air station with luncheon at the swank Officers' Club and joined the men for the barbecue Tuesday evening, final event of the convention.

Among those who took a prominent part in the convention business and fun were G. W. Pringle, Leesburg, Fla.; Hugh Lalor, Miami, president of the Florida Nurserymen and Growers Association; Tom Dodd, Sr., Semmes, Ala.; C. H. Brannon, Raleigh, N. C., state entomologist; Ed Ayres, Gainesville, Fla., state plant board, and B. P. Livingston, Montgomery, Ala., chief Alabama inspector.

GARDEN structures are discussed in the articles that compose the summer, 1954, issue of Plants & Gardens, quarterly publication of the Brooklyn Botanic Garden, Brooklyn 25, N. Y. Illustrations of the work of leading landscape architects accompany the articles on paved terraces, walks and paths, steps, walls, fences, pools, arbors and fireplaces.

#### FALL, 1954 - SPRING, 1955 Seedlings, etc.

occurrings, etc.		
	Per 100	Per 1000
Abies concolor, 2-yr., S., 3 to 6 ins	.\$10.00	
Acer palmatum, 1-yr., S., 3 to 6 ins	6.00	8 50.00
5000 and up		40.00
Acer rubrum, 2-yr., S., 6 to 12 ins.	. 5.00	****
Acer saccharum, 2-yr., S., 12 to 15 ins	. 6.00	
Amelanchier canadensis, 1-yr., S., 8 to 12 ins	8.50	
Berberis thunbergi atropurpurea, 2-yr., S., 12 to 18 ins	. 8.50	75.00
Crataegus cordata, 1-yr., S., 6 to 10 ins	. 5.00	
Crataegus crusgalli, 1-yr., S., 3 to 6 ins	6.00	- ****
Euonymus alatus, 2-yr., S., 4 to 8 ins	7.50	65,00
Fagus sylvatica, 1-yr., S., 6 to 10 ins	10.00	85,00
Hamamelis japonica, 1-yr., S., 3 to 4 ins	10.00	****
Hex cenata, 3-yr., S., 4 to 8 ins	7.50	65.00
Hex crenata convexa, 2-yr., S., 3 to 6 ins	6.00	50.00
Hex glabra, 2-yr., S., 6 to 8 ins	15.00	125.00
Ilex verticillata, 1-yr., S., 4 to 8 ins	8.00	1111
Juniperus virginiana, transplanted understock	10.00	85.00
Laburnum anagyroides, 1-yr., S., 6 to 8 ins	. 5.00	40.00
Picea glauca, 2-yr., S., 3 to 6 ins	7.50	65.00
Picea pungens glauca, 3-yr., S., 6 to 12 ins	. 10.00	
Pinus aristata, 4-yr., S., 4 to 6 ins	7.50	65.00
Pinus mughus (True dwarf Tyrolean), 3-yr., S., 4 to 6 ins	6,50	60.00
Pinus mughus (True dwarf Tyrolean), 4-yr., S., 6 to 10 ins	7.50	65.00
*Pinus strobus, 2-yr., S., 6 to 10 ins.	6.00	50.00
Pinus thunbergi, 2-yr., S., 3 to 6 ins.	4.00	35.00
Pseudotsuga taxifolia glauca, 2-yr., S., 3 to 6 ins.	5.00	40.00
Pseudotsuga taxifolia glauca, 3-yr., S., 6 to 12 ins	8.00	75.00
Sorbus aucuparia, 2-yr., S., 6 to 12 ins	6.00	50.00
Taxus cuspidata, 2-yr., S., 3 to 6 ins.	12.00	100.00
Thuja orientalis, transplanted understock	7.50	65.00
Tsuga canadensis, 8 to 12 ins., T.	20.00	
Vibraum carles 0 ve C 4 to 0 to	. 15.00	* * * *
Viburnum carlesi, 2-yr., S., 4 to 8 ins	7.50	60.00
Viburnum lantana, 2-yr., S., 4 to 8 ins	19.50	100.00
Viburnum setigerum, 1-yr., S., 4 to 8 ins		

#### Five-needle pines cannot be shipped in the following states: Arizona, Colorado, Georgia, Kentucky, New Mexico, Nevada, South Carolina and Te Well-established cuttings from 21/4-in. pots.

	0 Per 100	Ericaceous plants
Chamaecyparis cyano viridis \$2.2	5 \$17.50	
Euonymus carrierei 2,2	5 17.50	from 21/4-in. pots.
Euonymus patens 2.2	5 17.50	110111 2/4-111. pocs.
Euonymus vegetus 2.2	5 17.50	Per 10 Per 100
Hex crenata convexa 2.2		Azalea mollis
Ilex crenata helleri 2.2		Azalea schlippenbachi 2.25 17.50
llex crenata microphylla 2.2	3 17.50	
Ilex crenata rotundifolia 2,2		Azalea vaseyi 2.25 17.50
Ilex glabra		Enkianthus campanulatus 2.25 17.50
Juniperus glauca hetzi 2.2	5 17.50	Pieris floribunda 2.75 22.50
Juniperus horizontalis Bar		Pieris Japonica 2.25 17.50
Harbor 2.2	5 17.50	Rhododendron maximum 2.25 17.50
Juniperus pfitzeriana 2.7	5 22.50	
Juniperus pfitzeriana nana 2.7.	5 22.50	1-year grafts from 21/4-in, pots.
Juniperus sargenti 2.7	5 22.50	Per 10 Per 100
Mahonia bealel 2.5	0 20.00	Acer saccharum
Taxus baccata repandens 2.2	17.50	monumentale
Taxus cuspidata aurea 2.7	22,50	Cornus florida pendula 7.00 60.00
Taxus cuspidata capitata 2.7		Cornus florida rubra 7.00 60.00
Taxus cuspidata nana 2.2:	17.50	Fagus sylvatica riversi 7.00 60.00
Taxus cuspidata F & F		Hamamelis mollis 7.00 60.00
compacta 2.2	5 17.50	Juniperus chinensis keteleeri. 7.00 60.00
Taxus cuspidata densiformis. 2.2	17.50	Juniperus chinensis sargenti 7.00 60.00
Taxus media browni 2.2:	17.50	Juniperus chinensis sargenti
Taxus media cliftoni 2.2	17.50	glauca 7.00 60.00
Taxus media Halloran 2.2	17.50	Juniperus virginiana burki 7.00 60.00
Taxus media hatfieldi 2.2	17.50	Juniperus virginiana canaerti 7.00 60.00
Taxus media henryi 2.2	17.50	Juniperus virginiana glauca . 7.00 60,00
Taxus media hicksi 2.2/	17.50	Juniperus virginiana globosa 7.00 60.00
Taxus media Moon's		Juniperus virginiana schotti. 7.00 60.00
columnaris 2.2	17.50	Juniperus squamata meyeri 7.00 60.00
Taxus media Vermeulen 2.2		Magnolia sieboldi parviflora . 8.50 75.00
Thuia occidentalis globosa	2 2 2 2 2 2 2	Parrotia persica 7.00 60.00
Howe type 2.21	17.50	Tsuga canadensis sargenti 7.00 60.00
DUE TO HANDLING COSTS	ACCE	PTED.

TERMS

TERMS

Prices in this list are not cash F.O.B. Mountain View, N. J., but the usual terms will be extended to those of established credit. No goods sent C.O.D. unless 25% of amount is sent with order. Five of one kind will be billed at the 10 rate; 25 at the 100 rate; 250 at the 1000 rate. From those not acquainted with our stock, a trial order will be appreciated. Packing extra at cost.

HESS' NURSERIES

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# NOTICE OF CLOSE-OUT SALE

Bed-grown Rhododendrons-carolinianum, catawbiense and maximum—and Leucothoe. Could be used for immediate fall sale. Approximately 3,000 plants up to 24 ins. Interested in selling entire lot. No reasonable offer refused. Send your representative to make offer. Also available approximately 200 hybrid lilacs, up to 5 ft. Terms: cash only. Write or phone for appointment.

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BOHEMIA, N. Y.

Sayville 4-2469-J

# LINING-OUT STOCK

Ea	ch	Each
	er 00	per 1000
Ilex crenata, 2-yr., S., 4 to 6 ins.		\$0.05
1-yr., S., 2 to 4 ins		.03
3-yr., T., field beds, 6 to 8 ins	30	.25
Ilex convexa, 3-yr., T., field beds, 6 to 9 ins	35	.30
Juniperus pfitzeriana glauca, 3-yr., T., field beds, 8 to 10 ins.	35	.32
	)3	.32
2	35	
2-yr., T., field beds, 6 to 8 ins.	25	* *
Taxus hicksi, 2-yr., T., field beds	25	
Cash with Order. Free Packing.		

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The ideal permanent evergreen ground cover plant for shady and semishaded area in all climates. Strong, well-rooted, 1-yr. plants: \$4.25 per 100 parcel post prepaid. \$35.00 per 1000; \$32.50 per 1000 for 10,000 or more in same shipment. Available for prompt shipment—late March through November. Shipments anywhere, including

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A very complete line of Quality Ornamental Stock.

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One of the most complete collections of the better named evergreen hollies in the country.

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#### CANADIAN HEMLOCKS

Fall and spring delivery. Beautiful, heavy, sheared material.

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										P	er	10	Pe	r 10	0
2	to	3	ft	 							\$4.	25	1	\$4.0	0
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														50.0	
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LEGHORN'S EVERGREEN NURSERIES Geer St. CROMWELL, CONN.



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### West Virginia Meet

By F. Waldo Craig

The West Virginia Nurserymen's Association held its 16th summer meeting, August 5 to 7, in the Community building at White Sulphur Springs, W. Va.

In the business sessions of the meeting, new officers were elected as follows: President, Carson Turner, LaBars' Rhododendron Nursery, White Sulphur Springs; vice-president, Al Peters, and secretary-treasurer, F. W. Craig, state department of agriculture, Charleston.

A. G. Smith, Jr., associate professor of floriculture at the Virginia agricultural experiment station, at Blacksburg, Va., gave a speech on roses to an audience which contained many local garden club members. In addition, Mr. Smith showed many beautiful slides of roses in different situations to stress the importance of trying to avoid radical pruning, extremely wet grounds, too much shade, carpenter bees and frost. At the conclusion of his talk, Mr. Smith answered questions on spraying, fertilizing and watering of roses.

On the morning of August 6, William Howe, Howe Nurseries, Pennington, N. J., discussed his experiences in retail marketing. Through shrewd business manipulation, Howe Nurseries were able to survive the depression of the early '30's and since that time have converted the majority of their business from a wholesale basis to retail plant sales lots. Mr. Howe thoroughly discussed plant merchandising through plant marketing lots and offered many timely and important suggestions. Emphasis was placed on marketing prices on the plants, good display and conditions, trained personnel to answer questions of the customers and pushing sales the year around. Also, Mr. Howe pointed out that it was not necessary to operate on the busiest thoroughfares, as their experience showed that suburban roads were actually better locations. Mr. Howe answered many questions on this extremely interesting subject.

Mr. Smith spoke again on "Landscaping the Small Home." He suggested that the landscaping theme be started in the back yard and carried forward with a good knowledge of each plant in regard to its growing habits.

Roger W. Pease, horticulturist, West Virginia University, Morgantown, presented an interesting talk

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on rooting cuttings using fog nozzles and hormones.

President Elsworth Black, Grove Nursery, Elm Grove, presided at the business meeting at which time there were discussions on unqualified persons doing tree work. It was decided that more damage than good seems to be the result of this practice. Suggestions included more education of garden clubs and individuals. It was suggested that garden clubs should make a project of this problem with the nurserymen supporting the work. A motion was carried that the West Virginia Nurserymen's Association would stand behind any project that garden clubs might develop along this line. Mrs. Percy Gillie, Bluefield, garden club representative, was to be contacted about such a project.

A decision was reached to let the English oaks planting be delayed because of the poor condition of the trees at that time. It was suggested that F. W. Craig, secretary-treasurer, contact Mrs. Clara Boyd, of the French gratitude train committee, about this matter.

The editing of the Nursery Views was discussed, and it was reported that E. R. Mattson, West Virginia University, would be most happy to edit the publication. However, Mr. Mattson would like to discuss the type of news-letter in which the nurserymen are most interested. Several nurserymen have planned to talk with Mr. Mattson on this matter.

New business included a discussion of selling wholesale to individ-

uals by nurserymen.

Tours of Greenbrier Nurseries; Conner & Amos, Charleston, and LaBars' Rhododendron Nursery, White Sulphur Springs, were conducted during the afternoon, and the evening was spent picnicking at the beautiful Greenbrier forest.

On August 7, T. D. Gray, extension landscape architect, West Virginia University, conducted a nature hike from the top of famous Kate's mountain over the Young Nature trail to the foot of the mountain. Many interesting plants were observed along the way and refreshments were served after the hike.

JOHN MILLER has announced that Donald F. Bowman, landscape architect, is now associated with Green Ridge Nursery, Northville, Mich.

GRAVOIS GARDEN NURSERY is now at Route 1, Box 358, Fenton, Mo., having moved from Valley Park recently.



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# **Nursery Defoliant**

Endothal Nursery Defoliant, when sprayed before digging, acts as a chemical frost. It induces rapid leaf drop without injury in a variety of decidu-ous nursery stock. Re-growth and condition of stock are equal to hand-defoliated plants.

You simply mix Endothal with water and spray it through ordinary equipment. Rainfall five or six hours after application will not ordinarily affect plant response.

Try a gallon now! Endothal's quick action allows you to test it on your own stock. Convince yourself that in-the-field defoliation is now possible.

Write today for your supply . . . or for free bulletin and name of nearest distributor.

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grow upright with a corkscrew twist.
growing large shrub or small recgrowing large shrub or small rectrees approximately 2 to 4 ft., \$2.50 each. Small trees approximately 3
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Per 100
Hydrangea P.G., 1-yr., layers \$ 8.50
Pin Oak, 2-yr., S
Red Oak, 2-yr., S
Scarlet Oak, 2-yr., S 16.50
Berberis thunbergi, 1-yr.,
9 to 12 ins 5.00
White-flowering Dogwood, 1-yr., S.,
10 to 15 ins 7.50
Salix Babylonica, 12 to 18 ins 6.00
2 to 3 ft 9.50
3 to 4 ft
Oriental Planes, 6 to 12 ins 8.50
12 to 18 ins 10.50
California Privet, 2-yr.,
12 to 18 ins 8.00
18 to 24 ins
2 to 3 ft
Packing charges extra.

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18% on the first \$500.00. 15% on the next \$500.00.

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SUIT FEES: On claims of \$45.00 or more, a suit fee of not less than \$7.50.

NO COLLECTION—NO CHARGE Freight bills not over two years old checked for 35 per cent of any amount found, Nothing found, no charge.

#### FRENCH PUSSY WILLOW

Reautiful February-forcing strain. Catkin sheath is a rich mahogany-red with attractive large silvery-pink catkins when mature. Is to 24 ins., \$33.00 per 100; \$250.00 per 100.00 per 100.0

BEARDSLEE NURSERY PERRY, O.



#### GARDENING IN THE SOUTH

Since its first publication, a few months more than a quarter century ago, "Gardening in the Lower South" has been a definitive guide in its area, which extends from the vicinity of Charleston, S. C., across the southern half of the states bordering on the Gulf of Mexico and over all of Florida. So its revision by the author, Dr. H. Harold Hume, is important to a section that has advanced rapidly in its horticultural aspects in recent decades. Just published by the Macmillan Co., at \$7.50, this volume of 377 pages of text is supplemented by 48 pages of photographic illustrations. The book covers all garden operations, as well as the various categories of plants especially adapted to the southern climate. Chapters on ca-mellias and day lilies have been

No authority can be found more versed in the subject of this book than Dr. Hume, who began his career in southern horticulture in 1899 as botanist at the Florida Agricultural College, at Lake City. Retiring in 1949 as provost and dean emeritus of the college of agriculture at the University of Florida, Gainesville, he has been the recipient of medals, awards and degrees in acknowledgement of his extensive services. His recent books on azaleas, camellias and hollies are as well known as were his books on citrus fruits and the pecan when published two or three decades ago.

#### **TUBEROUS BEGONIAS**

The constantly increasing popularity of tuberous-rooted begonias among gardeners of the cast and middle west, where they require extra care, and on the Pacific coast, where they flourish extravagantly, is reason enough for the publication of "Complete Culture of Tuberous Begonias," by Dr. W. Othur Hillery, just published by the Chieftain Press, at \$4. The author, who has specialized in growing shade-loving flowering plants in his garden near Seattle, Wash., for a quarter century, retired from practice in 1949 and has

#### FALL, 1954

Fruit trees, shrubs, shade trees, ornamental trees, evergreens, and taxus.

QUANTITIES IN:

Arborvitae, Aurea Nana Arborvitae, Dark Green American Berberis Mentorensis Birch, Weeping Cutleaf Cornus Florida Cotoneaster Divaricata Cotoneaster Opiculata Crab Apple, Flowering **Euonymus Alatus Compactus Euonymus Patens** Euonymus Vegetus Juniperus Canaerti Juniperus Columnaris Juniperus Glauca Juniperus Keteleeri Juniperus Pfitzeriana Maple, Silver Privet, Amur River North Prunus Newport Willow, Thurlow

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# HARDY PLANTS Bulbs and Shrubs

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#### HEMLOCK

Rhododendron — Kalmia Azalea

**CURTIS NURSERIES** 

CALLICOON, N. Y.

been giving additional time to these begonias, fostering a local society and exhibitions.

While he explains that his text is intended for those who grow begonias in the Pacific northwest, it applies in other places as well, aside from variation in the calendar of operations. Opening chapters treat of the types of tuberous begonia flowers. Others cover care of tubers; requirements of the plants as to soil, moisure and shade; propagation by seeds, division and cuttings; culture in pots and in beds; fall care of tubers; insects and diseases; exhibiting plants, and the use of flowers in decorations.

Bound in an attractive washable green cover, the book of 138 pages contains 44 illustrations, of which 18 show types of blooms, seven are of flower arrangements and the others depict methods of propagation, handling of tubers, etc. Concise and informal in presentation the book vields information desired by the amateur grower, from an experienced source.

#### FIRM FEATURED

Peterson & Dering, Inc., rosegrowing firm at Scappoose, Ore., recently was the subject of an illustrated article in the St. Helen's Sentinel Mist. The firm has about 35 acres of land planted to roses. Included in the more than 500,000 rosebushes which are shipped each year by the company to all parts of the United States and Canada are about 200 varieties, patented by leading nurseries. The Scappoose firm has been granted a license to grow and ship the flowers. At the present time, the establishment owns one patent which was purchased from another hybridizer. It is the Multnomah. However, hybridizers for the company have been working on special varieties which will go on the market soon. Both retail and wholsesale sales are handled by Peterson & Dering, Inc.

JOHN J. PINNEY, of the Willis Nursery Co., Ottawa, Kan., sought to escape the August heat by driving northward with his wife and daughter, going into Canada, where he visited the Morden experimental station. Motoring eastward to New York state, he visited nurserymen en route home, at Chicago picking up his son Tom, who graduated from Beloit College in June and will enter Yale University on a graduate fellowship this month.

# FINISHED TAXUS and LINERS



These fine plants are surplus of stock grown for our own landscaping business. Prices below are to the nursery trade and subject to prior sale. 25 at 100 rate; 250 at 1000 rate; 5% discount for cash with order. Boxing at cost.

TAXUS HATFIELDI 100	Each per 1000	TAXUS HICKSI Each per per per 100 1000
600 12 to 15 ins., B&B, XXX \$2,75		800 12 to 15 ins., B&B, XXX, \$2.25 \$2.00
700 15 to 18 ins., B&B, XXX. 3.75		600 15 to 18 ins., B&B, XXX. 3.50 3.25
1500 3-yr., XX, bands60	.55	300 18 to 24 ins., B&B, XXX. 4.25 4.00
		2000 3-yr., XX, bands60 .55
TAXUS CUSPIDATA CAPITATA		2000 2-yr., 2-in. pots30 .27
100 18 to 24 ins., B&B,XXX. 4.75	4.50	
150 2 to 21/2 ft., B&B,XXX 6.50		TAXUS BROWNI (GLOBE)
150 21/2 to 3 ft 7.75		1000 3-yr., XX, bands
25 3 to 31/2 ft 9.25		1000 2-114 NA. Dallos
TAXUS MEDIA NO. 18 (GLOBE)		TAXUS, PAYNE'S SPREADING
800 3-yr., X, 21/4-in, pots35		1000 3-yr., X, 21/4-in, pots35 .32

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#### **Patented Bush Roses**

	Price	Each
	Per	Per
Variety Description	10	100
Apricot Queen. Two-tone apricot	\$0.90	\$0.70
Baby-Blaze. Avid red	1.25	1.05
Babe Ruth. Two-tone pink	1.10	.95
Betty Prior (Floribunda). Pink	.90	.70
Bright Eyes (Floribunda).		
Lemon-yellow	.90	.70
Butterscotch. Buff-yellow	1.00	.80
Charlie McCarthy (Floribunda).		
White	1.10	.95
California. Orange	.90	.70
California Centennial. Crimson-red	1.10	.95
Capistrano. Rose-pink	1.10	.95
Charlotte Armstrong. Rose-pink	1.25	1.05
Chrysler Imperial. Vivid crimson	1.40	1.20
Connie Mack (Floribunda). Glowing		
crimson	1.10	.95
Crimson Rosette (Floribunda). Red.	1.00	.80
Damon Runyon. Crimson	1.40	1.20
Douglas MacArthur, Two-tone pink	1.00	.80
Edith Willkie. Two-tone yellow	1.00	.80
Fashion (Floribunda). Peach	1.10	.95
Forty-Niner. Two-tone red and yellow	1.40	1.20
Fred Howard. Two-tone yellow	1.40	1.20
Glorius (Floribunda). Two-tone pink	.90	.70
Goldilocks (Floribunda). Golden-		
yellow	.90	.70
Grand Duchesse Charlotte, Carmine	1.10	.95
meart's Desire. Light red	1.00	.80
Hedda Hopper. Flesh, pink, salmon.	1.10	.95
Henry Ford. La France pink	1.40	1.20
Helen Traubel. Peach pink	1.50	1.30
Hill Top. Pink and buff	1.00	.80
Imp. Cecile Brunner (Floribunda).	00	70
Rose-pink	.90	.70
Jiminy Cricket (Floribunda). Orange	1.40	1.20
Katherine T. Marshall. Coral-pink.	1.00	.80
Lilibet (Floribunda), Salmon-pink.	1.10	.95
Lowell Thomas. Deep yellow	1.10	.95
Ma Perkins (Floribunda). Salmon-		
pink	1.10	.95
Major Shelley. Glowing crimson	.90	.70
Mirandy. Dark crimson	1.25	1.05

	Price Per	Mar. 109 100 1 1
Variety Description	10	100
Mme. Henri Guillot. Flame-rose	\$1.10	\$0.95
Mme. Chiang Kai-Shek. Lemon-		
yellow	1.00	.80
Ming-Toy (Floribunda). Rosy-red	.90	.70
Mission Bells. Shrimp-pink	1.10	.95
Mojave. Orange-red	1.50	1.30
Nocturne. Dark red	1.10	.95
Olive Percival. Oriental red-gold	1.10	.95
Pearl Harbor. Two-tone pink	.90	.70
Peace. Gold and pink	1.40	1.20
Pink Rosette (Floribunda), Pink	1.00	.80
Pinocchio (Floribunda). Salmon-pink		.70
Pinkie (Floribunda). Pink	1.00	.80
Queen Elizabeth (Grandiflora). Pink	1.65	1.40
Remembrance. Two-tone yellow, pink		05
edge	1.10	.95
Santa Anita. Rose-pink	.90	.70
San Fernando. Scarlet-red	1.00	.80
Show Girl. Pink	1.10	.95
scarlet	1.10	.95
Sleigh Bells. White	1.10	.95
Sutter's Gold. Yellow, shaded grange	1.10	.75
and red	1.25	1.05
Tally Ho. Two-tone pink	1.10	.95
Tiffany. Pink		1.40
Tom Breneman. Rose-pink	1.10	.95
Vogue (Floribunda). Deep rose	1.10	.95
White Wings, Single white		.70
Will Rogers. Velvety crimson	.90	.70
World's Fair (Floribunda). Crimson	.90	.70

#### **Patented Climbing Roses**

Cl. California. Orange	\$1.40	\$1.20
Cl. Dream Girl. Salmon-pink	1.25	1.05
Cl. Floradora. Cinnabar-red	1.10	.95
Cl. Fred Howard. Two-tone yellow	1.40	1.20
Cl. Heart's Desire, Red	1.00	.80
Cl. High Noon. Yellow	1.40	1.20
Cl. Indian Summer. Orange-yellow.	1.00	.80
Cl. Mrs. Paul J. Howard. Crimson.	1.00	.80
Cl. Peace. Gold and pink	1.40	1.20
Cl. Santa Anita. Rose-pink		.80
Cl. Texas Centennial. Red		.95

#### Standard Bush Roses

Prices for all the following varieties: F.O.B. Southern California

Miss Row Mrs. E. P. Mrs. Love

Mrs. Pier Mrs. R. A Phyllis G Fink Daw Fink Rad

President led Rad ted Ripp tosen Elf Sister The Snow Bird alisman-The Doct lexas Ce lengo— White Fi

Stand felle of I Blaze—Se Cocile Be

Condesa Dainty Be Ednah Th Hoile De Gold Rus

Hadley— K. A. Vic Lady Syl-Lolita Ar Los Ange Mrs. E. P

Mme. G. New Daw Pink Daw Paul's Sc President Pink Rad

Red Rad Rose Ma Silver Me Talisman-Cl. Tom

Ville De

Each

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E.P. Tho P.S. Du

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A. Vic

McGred

Size 100
No. 1
No. 11/2
No. 2
Angels Mateu—Buff-yellow
Autumn—Copper and gold
Condesa de Sastago—Orange and red
Contrast—Two-tone pink
Countess Vandal—Orange-copper
Crimson Glory—Red
Crown of Gold—Yellow and buff
Crown of Jewels (Flor.)—Oriental red
Dagmar Spaeth (Flor.)—White, pink
Dainty Bess, Single Hy-T—Shell-pink Duquesa De Penaranda—Cinnamon-peach
Duquesa De Penaranda—Cinnamon-peach
Eclipse—Yellow
Elsie Poulsen (Floribunda) — Rose-pink
Ena Harkness—Deep red
Etoile De Hollande—Crimson red
Floradora (Floribunda)—Cinnabar-red
Frau Karl Druschki-White
Frensham (Floribunda)—Red
Golden Dawn—Lemon-yellow
Golden Sastago—Yellow and buff
Grenoble—Pink and salmon
Hadley—Red
Improved Lafayette (Floribunda)—Crimson
Joanna Hill—Cream-yellow
J. Otto Thilow—Rose-pink
K. A. Victoria—White
Lipstick (Shrub Rose)—Cerise
Los Angeles—Flame-pink
Margo Koster (Polyantha)—Salmon
McGredy's Ivory—Creamy-white
McGredy's Yellow—Canary-yellow McGredy's Scarlet—Scarlet
McGredy's Scarlet—Scarlet
Mme. Cochet-Cochet-Light pink
Margaret McGredy—Orange and scarlet
Mme. Jules Bouche—White and slight pink

#### Patented Tree Roses No. Stand

Please order in units of 5 to a variety Each \$2.45 F.O.B. Southern California

Charlotte Armstrong	Heart's Desire
Nocturne	G. D. Charlotte
Chrysler Imperial	San Fernando
Tom Breneman	Carrousel .
D.I.	NV

Show Girl	Lilibet
First Love	Mission Bells
Helen Traubel	Capistrano

	I ELLOW
Sutter's Gold	Lowell Thomas
Buccaneer	Fred Howard
Paaca	

	MULTI-COLOR	
Mojave Forty-Niner	Mark	Sulliva

#### WHITE

Sleigh Bells

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varieties: rnia

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-Crimson

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variety aliforn

Desire

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Bells

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nk n-peach

# DOLLAR PRODUCER Palifornia ROSES

Wiss Rowena Thom-Salmon and pink Mrs. E.P. Thom—Deep yellow
Mrs. Levell Swisher—Two-tone pink
Mrs. Pierre S. Du Pont—Golden-yellow Wrs. R. M. Finch-White and pink Willis Gold-Yellow Fol Dawn-Pearly-pink Radiance-Two-tone pink Insident Hoover—Red and gold Radiance - Cerise-red and Ripples, Shrub rose—Red
Rosen Elfe (Floribunda)—Rose pink ster Therese—Chrome-yellow ow Bird-White lisman—Rose and gold he Doctor-Silvery-pink less Centennial—Red -Red and yellow thite Finch (Floribunda) - White

#### Standard Climbing Roses felle of Portugal-Light pink

Alexa-Scarlet Cecile Brunner-Pink ndesa De Sastago-Copper and gold Jainty Bess-Shell-pink Ednah Thomas-Pink Hoile De Hollande—Bright crimson Gold Rush-Yellow Hadley-Deep crimson I. A. Victoria-White lady Sylvia - Light pink lolita Armour-Coral-red Lana Armour—Cordined

Lan Angeles—Flame-pink

Mrs. E. P. Thorn—Deep yellow

Mrs. G. Staechelin—Pink and carmine New Dawn—Light pink Fink Dawn—Rose-pink Paul's Scarlet - Scarlet President Hoover—Red and gold Fink Radiance Carmine-pink Radiance-Cerise-red Rose Marie-Rose-pink Silver Moon-White Talisman-Rose-gold Cl. Tom Breneman-Rose-pink

#### S No. Standard Tree Roses No. 1

Each \$1.95 F.O.B. Southern California

Ville De Paris-Yellow

Night ed Talisman Garnette (Poly) ed Radiance Floradora (Poly) Crimson Glory oile De Hollande PINK

A Radiance

The Doctor Otto Thilow Countess Vandal

> YELLOW Eclipse

P. Thom P. S. Du Pont McGredy's Yellow

MULTI-COLOR

resident Hoover Condesa De Sastago alisman Autumn

WHITE

A. Victoria Snowbird McGredy's Ivory Frau Karl Druschki

# PACKAGED ROSES

F.O.B. Southern California

#### No. 1 Grade

\$62.50 per 100 plants \$585.00 per 1000 plants

Shipped in colorful root-wrapped package as shown on the right. Will ship in carton if requested, similar to box shown on the left.

#### No. 2 Grade

\$43.50 per 100 plants \$395.00 per 1000 plants

Shipped in cartons as shown on the left. This newly designed carton is a proven "impulse" sales maker.

#### No. 2 Grade, Packed 3 Plants to a Package

\$87.50 per 100 packages \$825.00 per 1000 packages

This package is designed for special promotion sales. Package appears similar to one on the right. Each rose is individually labeled as to variety. Three pictures in four-color lithograph are banded around the base of the package.



Miniature Roses		Price	Each
All plants are from 21/4-in. pots unless	other-	Per	Per
wise indicated.		10	100
F.O.B. Fresno, Calif.		Thumbelina-New red. Improved	
Price Per	Each Per	Tom Thumb\$0.40	\$0.35
10	100	Rosa Rouletti-Pink	.35
Prosty—Pat. R.R. Whitest White . \$0.65 Patty Lou—Pat. App. for.	\$0.60	Oakington Ruby—Red	
Rose bi-color	.50	Cinderella-Pat. No. 1051, White65	.60
Lemon Drop—Pat. R.R. New. Tiny yellow buds	.50	Pixie—Pat. No. 408. White55	.50
Centennial Miss-Pat. App. for.		Red Imp-Pat. No. 1032, Red55	.50
	.35	Tinker Bell-Pat. New pink	.60
Pink Joy-Pat. App. for. Pink40		Baby Gold Star-Pat. No. 407	
Snowflake—New white	.35	yellow	.60

# Nurserymen's Exchange

938 Howard Street, San Francisco 3, Calif.

# **Prices and Profits**

Comments on Business Management in the Nursery

By John J. Pinney

#### PRICING FALLACIES

The nursery business has fallen into some strange practices. One of them is the way its products are priced. In order to understand this statement let us consider the practices commonly employed by manufacturers.

Nearly all manufactured products are given retail prices by the manufacturer. In this way he establishes a retail price that is high enough to cover all the costs until the product is in the hands of the consumer. Included are the initial cost of manufacturing the product, the cost of advertising to create customer demand, the cost of selling to the jobber and the dealer, the expenses of the retailer in placing it before and selling to the consumer as well as profits for the manufacturer, jobber and dealer.

The retail or consumer price usually is advertised to the consumer to establish its value in his mind. The importance of this has been recognized in the fair trade act, under which the dealer is bound to sell at the advertised price.

This practice is for the retailer's benefit as much as for the manufacturer and jobber because it insures him not only a profitable price for the product but protects him against unfair competition.

The cost to the retailer is based only indirectly on the cost of production. Rather, it is priced to him on the basis of the retail price. His cost is arrived at by a discount or series of discounts from the selling price.

By establishing the retail price the manufacturer can set it high enough to enable him and his distributors to conduct an adequate sales campaign that will create a market and insure profits for all.

How is it done in the nursery business? In this case the grower or wholesaler corresponds to the manufacturer. The grower guesses at his costs—that is exactly what he does—guesses. He does not know what it costs him to produce a given item. Even though the wholesaler has a rough idea of the cost of production it may not have much influence on his selling price because he takes other things into consideration in establishing his prices.

Among these considerations are

his own supply, his knowledge (or guess) of the supply in the hands of his competitors, his idea of the demand, what he thinks his competitors will charge and what he believes his customers are willing to pay. It is a confused pattern that results in a confused price structure in the nursery business. It accounts for the wide variation in prices on the same items.

The retailer, naturally, buys as low as he can and still receive good stock. Then when he sets his prices he does pretty much the same thing as the wholesaler. He wants to be competitive so he keeps the price as low as he dares. Too often the markup is too small.

The wholesalers, with few excep-

tions, do nothing about establishing retail prices in advertising to the consumer. Consequently the retailer has to do the advertising, but his selling price is not high enough to allow an adequate ad budget.

That is why the nursery ads in magazines and newspapers are so small. The plain fact is that nurserymen cannot afford to spend much for advertising. Furthermore, it is not likely that they ever will until they make a higher margin of profit.

The mental processes involved in pricing nursery stock are partially responsible for this situation. Take an example: Suppose a shrub costs 50 cents and retails for \$1. Too often the retailer thinks he is making 100 per cent. He could not be more mistaken.

Like other merchants, he should figure markup on the selling price, not on cost. Then he would realize that his markup is only 50 per cent.

There is no such thing as 100 per cent markup. Figure it out for your-

	Each	Per 1000	
12 to 15 ins		*****	
15 to 18 ins		****	
18 to 24 ins	4.75	*****	
TRIMMED SPECIMEN TAXUS ANDERSONI Every one a perfect plant.			
12 to 15 ins.	3.00		
15 to 18 ins.  Here are just a few of our extra-heavy liners:	3.85		
Field-grown from cuttings. Beautiful plants.			
9 to 12 ins., br	.40		
EUONYMUS COLORATUS			
12 to 15 ins	.50	\$450.00	
EUONYMUS PATENS			
Extra heavy, suitable for potting.	17.00		
8 to 12 ins	.45	400.00	
EUONYMUS VEGETUS			
Heavy. 8 to 12 ins.	.50	450.00	
RIBES ALPINUM			
Heavy, 8 to 10 ins., br	.30	250.00	
MULTIFLORA UNDERSTOCKS			
American-grown, heavy roots from diseyed			
cuttings. For fall or spring planting		35.00	

Write us for complete list on lining-out stock.

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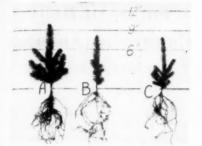
Write for our current trade list

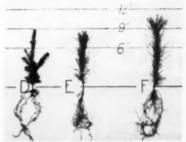
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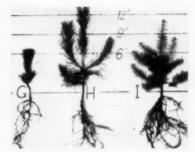
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#### Fall Liners and Christmas Tree Stock Fall, 1954

		Per 100	Per 1000	Per 10,000	Per Per Per 100 1000 10,00	
	Colorado Blue Spruce, 3-2, 9 to 12 ins.	\$35.00			\$ 3.00 \$ 14.00 \$12.00	0
1	Colorado Blue Spruce, 3-2, 6 to 9 ins.		\$150.00		* F Riga Scotch Pine, 2-0, 6 to 10 ins. 8.00 36.00 35.00	)
	Colorado Blue Spruce, 3-2, 4 to 6 ins.		80.00		<ul> <li>Riga Scotch Pine, 2-0, 3 to 6 ins. 5.00 22.00 21.00</li> </ul>	)
	Colorado Blue Spruce, 3-0, 3 to 5 ins.		30.00		G Austrian Pine, 2-0, 3 to 6 ins 6.00 25.00 24.00	)
	Colorado Blue Spruce, 3-0, 5 to 10 ins.	10.00	65.00	1411	H Austrian Pine, 2-2, 8 to 12 ins 12.00 90.00	
	White Spruce, 3-0, 3 to 5 ins	4.00	20.00		Mugho Pine,	
(	White Spruce, 3-0, 5 to 10 ins	8.00	40.00		3-0, top sheared to about 3 ins 5.00 30.00 25.00	,
	Norway Spruce, 3-0, 3 to 5 ins	4.00	20.00		Douglas Fir, Rocky Mt. type, 2-0, 3 to 8 ins 6.00 28.00 25.00	1
-	Norway Spruce, 3-0, 5 to 10 ins	8.00	38.00	****	Douglas Fir.	
	Riga Scotch Pine, 2-1, 3 to 8 ins.	10.00	45.00		taxifolia glauca, 2-2, 6 to 9 ins 10.00 75.00	
*	Riga Scotch Pine, 2-0, 31/2 to 8 ins.	7.50	26.00	\$24.00	I taxifolia glauca, 2-2, 9 to 12 ins 15.00 125.00	
	TERMS. Cash with ander places on 25		donnelle	balance b	of a discount E and and discount for each with and a se full and as	

TERMS: Cash with order please; or 25 per cent deposit, balance before shipment. 5 per cent discount for cash with order on fall orders. On spring orders, 5 per cent discount if paid in full December 1, 1954.

25 at 100 rate, 250 at 1000 rate; all seedlings in multiples of 50, all transplants in multiples of 10.

Minimum order \$10.00. (Packing charge included in price of trees.)

\* Prices available on request for 50,000 or more.

HARBOR SPRINGS, MICH.

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#### MATTHEWS NURSERY

self. The formula is simple. Divide the difference between cost and selling price to arrive at the per cent of markup.

The fact is that the nursery business cannot operate with an adequate profit on a 50 per cent markup. The markup must cover not only the wholesale price, but transportation, packing, shrinkage, selling cost and overhead.

Consult those nurserymen who have been most successful and they will tell you that they must get from two and one-half to four times the cost to make an adequate profit. Translated into markup this is from 60 to 75 per cent.

The nursery business would do well to follow the example of the manufacturer. This will not be easy because of the many difficulties in the way, but someday it will be done.

The plant patent owners are pointing the way. They establish retail prices on their plants which are much higher than those of nonpatented plants in the same class. The higher profits are utilized to advertise and merchandise the patented plants, thus creating a market at prices with which the consumer is already familiar.

The same practice could be followed when new plants are introduced even though they may not be patented. When a profitable retail price is once established, it is much easier to maintain it thereafter.

Why will a homeowner willingly pay \$3 for a rosebush today when a few years ago he never paid more than \$1.50? The answer is that he wants the rosebush and he wants it because a desire for it has been created by effective advertising paid for out of higher profits.

#### ROSE BROCHURE PUBLISHED

A handsome brochure featuring Armstrong rose creations has been issued by the Armstrong Nurseries, Ontario, Calif., as a sales aid for retail dealers. In its pages are pictured in striking color the many outstanding varieties developed by the firm's research department during the past 20 years, including varieties which have been named All-America Selections and new introductions. An index classifies the featured roses by color.

The brochure has been published to enable dealers selling dormant bushes to have a means of showing retail customers the beauty of bloom that they may expect. One copy is being sent free of charge to each Armstrong dealer, with additional copies available at a nominal charge.

### LANDSCAPE MATERIAL

Pinus Resinosa (Red Pine). first class for landscape projects 5 to 6 ft., B&B...... 6.50 6 to 7 ft., B&B..... 7 to 8 ft., B&B..... Tsuga Canadensis (Canadian Hemlock), heavy sheared specimens. 31/2 to 4 ft., B&B..... 4 to 41/2 ft., B&B...... 6.50 Picea Excelsa (Norway Spruce) 
 Picea Glauca (Black Hills Spruce)
 2 to 3 ft., B&B.
 2.85

 3 to 4 ft., B&B.
 3.50
 Cornus Florida (White-flowering Dogwood) 3 to 4 ft., B&B. 2.50 4 to 5 ft., B&B. 3.00 5 to 6 ft., B&B. 3.50 6 to 7 ft., B&B. 4.50 7 to 8 ft., B&B. 6.50 8 to 9 ft., B&B...... 7.50 Multiple stems add 10 per cent.

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The new, sensational shrub for ranch-house landscaping, dwarf hedges, potting and B&B sales.

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NURSERY MANUAL, by L. H. Bailey. Standard manual on propagation. 470 pages, \$5.50. American Nurseryman, Chicago 4, Ill.



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# **Future of Holly** Culture in America

Part II . By Shiu-ying Hu

Arnold Arboretum, Jamaica Plain, Mass.

In the first installment of this series, Dr. Hu discussed the limited number of holly species to be found in this country and went on to describe the fruiting habits of various types of holly. In this second and concluding installment she suggests definite plans for increasing the number of ilex species available through propagation, introductions and hybridization.]

Ilex is a widely spreading genus. It occurs in the temperate and tropical regions of both hemispheres except in the western and northwestern United States. The 36 species entered in Rehder's manual represented nearly all the species ever introduced into cultivation. After locating the original home of each species, one cannot but feel that they are from geographically limited areas. Ten out of these 36 originated in the United States, but only Ilex opaca and Ilex verticillata are common in American gardens; two of the 36 originated in the Canary islands, and neither of them is common in American gardens; three originated in eastern Himalayan regions, and none of them is found in American gardens; 12 were from China, two of which, Ilex cornuta and I. pernyi, are in American gardens; nine were from Japan, and only one, Ilex crenata, is common in American gardens. Central and South America and the West Indies are known to be rich in hollies.

#### Vision and Practical Suggestions

I have a vision. I see that 10 to 25 years from now, in many American gardens, as in the Grand hall of the United Nations' building, where people of all colors, customs and languages are gathered, each showing his own personality as well as his nationality, there will be hollies from all nations-substantial, like Ilex latifolia; graceful, like Îlex geniculata; showy, like Ilex micrococca; rich, like Ilex chinensis; mighty, like Ilex cornuta; weak, like Ilex rugosa; compact, like Ilex subcordata, and prostrate, like Ilex intricata. Each has its own place. I also see that by that time, during the cold winter months when flowers are rare, large quantities of beautiful hollies of the cymosa, chinensis and latifolia, as

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SCOTCH PINE—\$40.00 per 1000
Pinus sylvestris, Riga Variety, 2-yr. seedlings, 6 to 8 ins.

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Pinus sylvestris, Riga Variety, 4-yr. transplants, 12 to 16 ins.

RED PINE—\$25.00 per 1000
Pinus resinosa, 2-yr. seedlings, 4 to 6 ins.

RED PINE—\$75.00 per 1000
Pinus resinosa, 4-yr. transplants, 12 to 16 ins.

AUSTRIAN PINE—\$35.00 per 1000 Pinus nigra, 2-yr. seedlings, 4 to 6 ins.

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well as cornuta, aquifolium and opaca types, will be raised in gardens down south and shipped to all florists in abundance. How can this vision be realized? By propagation of the lesser- known species, planned introductions and hybridization.

#### Propagation

There are several good species, the merits of which are not known by American growers. The best of these are Ilex latifolia, Ilex chinensis, Ilex yunnanensis and Ilex micrococca. For example, up to the past year or two, no American grower knew the color of the berries of Ilex yunnanensis.

The director of the Arnold Arboretum, Dr. Karl Sax, is a cytogeneticist with vision. Realizing that the evergreen, shrubby species of hollies like Ilex glabra and Ilex crenata all have black berries and the red-berried species like Ilex verticillata and Ilex laevigata have no leaves when their fruits are at their best, for several years he tried to produce a redberried Ilex glabra or Ilex crenata by hybridization. For this purpose, I have pollinated hundreds of holly flowers for him and had no success.

llex yunnanensis has been planted in the Arnold Arboretum for over 20 years. Having no male plant near it, it bore no fruits. Three years ago, Dr. Donald Wyman, the horticulturist of the Arnold Arboretum, planted a male plant near the old plant. Last year, that old Ilex yunnanensis bore fruits in great abundance and, to the surprise of many, the beauty that Dr. Sax had hoped for was realized. Such a plant, and those the Oriental peoples have known for their merits, should be propagated in large quantities.

#### Planned Introduction

Out of the 36 cultivated species of hollies entered by Rehder, 21 came from the Orient-that is, 12 from China and nine from Japan. When these hollies were introduced, the flora of China and Japan were not well known. Men like Sargent and Veitch who knew that the Chinese and the Japanese were good gardeners sent collectors there hoping to gather some valuable plants. These hollies were introduced by accident rather than by plan. In most cases only one or two, or a few plants, were introduced. In this country they were then propagated vegetatively. In case of the plant's being a male, that would be the end of it. For this reason, the merit of many good Oriental species of hollies, like I. latifolia, I. chinensis and I. yunnanensis,

## NURSERY STOCK

Per 100
Aralea mollis, 2-yr., T., sheared,       L.O. stock     \$10.00       bushy, 6 to 8 lins     20.00       bushy, 8 to 10 lins     30.00       bushy, 10 to 12 lins     46.00
Euonymus vegetus, 2-yr., T.,
L.O. stock
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bushy, 4 to 6 ins.       20,00         6 to 8 ins.       30,00         8 to 10 ins.       40,00
LILACS-Florent Stepman, Ruhm
von Horstenstein, Charles X, Michel Buchner, Hugo de Vries, Ludwig Spaeth, President Grevy, Charles Joly, Hugo Koster, Mme. Lemoine, 1-yr., buds, 10 ins. and up. br., L.O. stock
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8 to 12 ins
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	Per	Per
Rhodotypos (pictured).		1000
12 to 18 ins., S	\$10.00	\$ 85.00
Cornus florida, 12 to 18 ins., R. P	10.00	85.00
Syringa vulgaris,		
12 to 18 ins., S	10.00	85.00
6 to 12 ins., S	7.50	65.00
Washington Hawthorn.	22 50	200.00
12 to 18 ins., T 9 to 12 ins., T	22.50	135.00
	13.00	135.00
Kolkwitzia amabilis,	20.00	175.00
12 to 18 ins., S 9 to 12 ins., S		125.00
	. 5.00	120.00
Red Barberry, 12 to 18 ins., S	12.50	100.00
	12.50	100.00
Viburnum dentatum,	12.50	100.00
12 to 18 ins., S	12.50	100.00
Viburnum dilatatum,		105.00
12 to 18 ins., S	15.00	125.00
Viburnum lantana,		
12 to 18 ins., S	15.00	125.00
Viburnum opulus,		
12 to 18 ins., S	12.50	100.00

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is not appreciated by American growers. What is wanted is now better understood and there is also a better knowledge of the flora of the homeland of hollies. With the rapid means of transportation by air mail, cuttings of good species and large quantities of seeds can be introduced from Japan and Taiwan in a week's time. To furnish a guide for such introductions, I have just finished a paper on the ilex of Formosa and Liukiu islands.

As mentioned before, the nations near the United States that are rich in ilex should also be considered in this planned introduction. For example, Ilex tolucana of the cold pine zone of the Sierra Characo, Sonora, Mexico, and Ilex karsteni, which grows at 3,500 feet above the sea at Boyaca, Colombia, both have large clusters of fruits and should be introduced for southern gardens. Ilex domestica of Brazil and Ilex flanisi of Jamaica also have large clusters of fruits. Ilex subcordata nummularioides of Brazil has the most compact habit and the glossiest foliage that any holly can produce. All these species should be given a trial in the soil of American gardens.

#### Value of Cooperation

Regarding the introduction of hollies, horticulturists can learn a lesson from Dr. E. D. Merrill and his introduction of metasequoia into America, Europe and Australia. He sent \$250 to Dr. W. C. Cheng, a Chinese forester at Nanking, China, and asked him to supervise an expedition for the collection of the flora of the metasequoia region and for seeds. Subsequently bushels of metasequoia seeds for redistribution to botanical gardens and individuals interested in the preservation of this living fossil the world over were sent back to him. Now, all the metasequoia in the world (with the exception of those in China and three plants in California) have come from his seeds. This fact illustrates the efficiency of cooperating with native botanists or leaders in the introduction of plants.

For cooperation in the introduction of hollies from Japan and Formosa (Formosa has many hollies common to those of the Chinese mainland), I should like to suggest Dr. Hiroshi Hara, of the Botanical Institute, University of Tokyo, Tokyo, Japan, and Prof. W. F. Chu, department of forestry, National University of Taiwan, Taiwan (Formosa), China.

Doubtless, hybridization will produce still other forms for America.

# TAXUS and JUNIPERUS

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

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EUROPEAN MT. ASH **MAGNOLIA SOULANGEANA** AND NIGRA **WASHINGTON THORN** 

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Buxus koreana microphylla. New Hardy Boxwood Euonymus alatus Euonymus alatus compactus Euonymus carrierei and Newport Euonymus yeddoensis (Bittersweet Tree) Hypericum kalmianum

Kerria japonica floraplena (pot plants) Koelreuteria paniculata

Kolkwitzia amabilis Ligustrum regelianum, true type Lonicera zabeli Prunus tomentosum Rhus cotinus Spiraea Anthony Waterer

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# **OBITUARY**

Sam P. Ford

Sam P. Ford, of North Tyler Nursery Co., Tyler, Tex., died July 28 at his home, it has been learned. He had been in the nursery business 56 years. He was credited with originating the modern method of budding roses.

He is survived by his widow; a daughter, Mrs. Charles W. Morrow. and three sons, Tim, Mark and Sam P. Ford, Jr., all of Tyler.

#### Joseph P. Crynes

Joseph P. Crynes, who made his home at Kew Gardens, L. I., N. Y., died recently at the age of 72. He had been associated with Vaughan's Seed Co. for about 20 years, and before that, with the former Stumpp & Walter Co., New York.

#### NEW PECAN SELECTIONS

Hayes and Patrick are two newly named pecan varieties for Oklahoma, selected at the conclusion of an extensive survey among growers of native pecans in the state conducted by the division of agriculture,

Oklahoma A. and M. College, Still-water, Okla. The survey was conducted as a contest among pecan growers. Individual entries were examined and placed according to desirability for shelling, with such factors as kernel percentage, size and shape of nut, completeness of separation of kernels from shell and color of kernel taken into consideration. Trees which produced the top 10 nut entries were visited, and information was obtained on production, disease resistance and date of ma-

The parent tree of Hayes is located in Lincoln county, Oklahoma. It is a large tree which bears regularly and averaged 64 pounds of nuts per year from 1947 to 1953. The Haves nut is medium in size, oblong to roundish in shape and has a thin shell. The kernel is plump, wide, rather dark, and has good flavor and quality.

The parent tree of Patrick is located in Rogers county, Oklahoma. It bears every other year. From 1948 to 1953 production averaged 72 pounds per year. The kernel is light in color, elongated, plump and smooth. The shell is thin and easy to crack. The nut is a dull brownish color with distinct markings at the

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Write for special quotations on quantities of 10,000 or more.

The above prices are F.O.B. Griggsville, Ill. nursery. tops cut back to 10 ins. at shipping unless otherwise requested.

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	Per !00	Per 100
Colorado Blue Spruce, (2-0), 3 to 5 ins	\$ 4.50	\$25.0
6 to 8 ins	5.50	35.0
White Spruce, (2-0), 3 to 5 ins	4.00	20.0
6 to 8 ins	5.00	30.0
forway Spruce, (2-0), 2 to 4 ins	3.00	15.0
(2-2), 3 to 5 ins	5.50	35.0
(2-2), 6 to 8 ins	7.00	50.0
(2-2), 8 to 10 ins	8.50	65.0
Austrian Pine, (2-0), 2 to 4 ins.	3.00	15.0
(3-0), 8 to 10 ins	5.50	35.0
(2-2), 6 to 8 ins	6.50	45.0
(2-2), 8 to 10 ins	8.50	65.0
cotch Pine, (2-0), 3 to 5 ins	3.00	15.0
(2-0), 6 to 8 ins	4.50	25.0
(2-2), 4 to 8 ins	5.50	35.0
(2-2), 8 to 10 ins.	7.00	50.0
ed Pine, (3-0), 8 to 10 ins	5.50	35.0
Augho Pine (Dwarf Tyrolean), (3-0), 2 to 4 ins.	4.00	20.0
White Birch Seedlings (Alba Pendula), (2-0), 12 to 15 ins	10.00	
ack Pine, (3-0), 12 to 15 ins.	6.00	35.0
cotch Pine and Norway Spruce, bedding stock, (2-0), up to 2 ins.		7.5

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 18 to 24 ins.
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# Plant Patents

The following plant patents were issued recently, according to Rummler, Rummler & Snow, Chicago patent lawyers:

No. 1285. Rose plant. Eugene S. Boerner, Newark, N. Y., assignor to Jackson & Perkins Co., Newark. A new and distinct variety of rose plant of the large-flowered polyantha class, characterized particularly as to novelty by its type of plant growth and type of flowers comparable to those of Pinocchio (plant patent No. 484), by its relatively great floriferousness, by the begonia-rose general color tonality of its half-open flowers, by the eosin-pink genral color tonality suffused over the lower half of the petals and La France-pink color of the fully open flowers and by its suitability for both outdoor planting and greenhouse culture.

No. 1286. Rose plant. Eugene S. Boerner, Newark, N. Y., assignor to Jackson & Perkins Co., Newark. A new and distinct variety of rose plant of the large-flowered polyantha class, characterized particularly as to novelty by its compact growing habit and other general over-all plant characteristics similar to those of the variety Pinocchio (plant patent No. 484), by its hardiness which is comparable to that of the variety Fashion (plant patent No. 789), by its oval-pointed leaflets comparable to those of the aforesaid Fashion variety, by the cupped shape of its flowers comparable to those of the aforesaid variety Pinocchio, by the double petalage of its flowers, by the distinctive coloring of its flowers especially in the half-open stage and by the distinctive coloring of its young foliage comparable to that of Fashion

No. 1287. Nectarine tree. John M. Garabedian, Fresno, Calif. A new and distinct variety of nectarine tree, bearing clingstone fruit which, as compared to the Tioga variety of nectarine, is characterized by fruit of similar color but larger size, ripening approximately four weeks later than said Tioga; the flesh of the fruit of the instant variety being mild in flavor, medium texture, crisp and meaty, as compared to the tart, pithy flesh of the Tioga.

No. 1288. Pothos plant. Daniel J. Greer, Hialeah, Fla. A new and distinct variety of pothos plant, characterized particularly by its rapid propagation and quick growth and by its leaves, each having sharply contracting white, yellow and green color patterns, instead of a combination of just two of these colors.

No. 1289. Rose plant. Orlando Obertello, Oakland, Calif. A new and distinct variety of hybrid tea rose plant, characterized particularly by its combination of healthy, bushy plant growth; strong, heavy canes; abundance of large foliage, which is soft and smooth but leathery, and by its large fragrant flowers of compact form, medium petalage and bright red color.

No. 1290. Ivy plant. Walter S. Hahn, Pittsburgh, Pa. A new and distinct variety of ivy (Hedera helix) plant of the selfbranching type, characterized particularly by its plentiful dark green lanceolate leaves, having deeply dissected lobes ard

# EVERGREENS

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TAXUS (heavy sheared)	Each	JUNIPERS (heavy sheared) E	ach
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18 to 24 ins	4.00		.75
Taxus Browni, 15 to 18 ins		24 to 30 ins 3	
18 to 24 ins	. 4.00		.25
Taxus Hicksi, 15 to 18 ins			.50
18 to 24 ins			.75
24 to 30 ins			.50
30 to 36 ins	. 6.00		.25
Taxus Hatfieldi, 15 to 18 ins	. 3.00		.00
18 to 24 ins			.50
24 to 30 ins		4 to 5 ft	.00
Taxus Andersoni, 15 to 18 ins	. 3.00		.00
18 to 24 ins			.50
24 to 30 ins		4 to 5 ft	.00
Taxus Intermedia, 15 to 18 ins	. 3.00	an.ere	
18 to 24 ins	4.00	GRAFTS	
Taxus Adams Columnaris, 18 to 24 ins	3.75	Keteleeri Juniper, 3 ft	.00
24 to 30 ins	4.50		.00
30 to 36 ins	5.50		.00
			.00
Magnolia Soulangeana, 2 to 3 ft	2.00		.00
3 to 4 ft		TERMS-5% discount when cash accompanies order. 2	0/
4 to 5 ft	5.00	discount when paid within 10 days after receiving	
		invoice. Net 30 days.	ng
Ilex Cornuta Burfordi, 15 to 18 ins		All stock listed is dug B&B.	
18 to 24 ins	. 2.75	All stock listed is dug bab.	

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ranged and superimposed in such a way as to give a winged effect.

No. 1291. Rose plant. Herbert C. Swim, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario. A new and distinct variety of rose plant of the hybrid tea class, characterized particularly as to novelty by the relatively large size and increased petalage of its flowers; by the strong, long and upright flowering stems thereof; by the distinctive various shades of orange coloring of its flowers; by the strong tea fragrance of its flowers, and by its abundance of glossy foliage.

No. 1292. Rose plant. Herbert C. Swim, Ontario, Calif., assignor to Armstrong Nurseries, Inc., Ontario. A new and distinct variety of rose plant of the hybrid polyantha class, characterized particularly as to novelty by its cluster blooming habit; by the improved petal substance and attendant lasting quality of its blooms; by the relatively good size of its flowers, ranging between that of its parents, and by the distinctive medium red general color tonality of its flowers, approaching the coloring of its parent World's Fair (plant patent No. 362) but lighter and brighter than the coloring of the latter.

No. 1293. Rose plant. John de Vink, Boskoop, Netherlands, assignor to Conard-Pyle Co., West Grove, Pa. A new and distinct variety of rose plant of the miniature class, characterized particularly as to novelty by its true miniature habit of growth and by the bright pink general color tonality of its flowers.

No. 1294. Hybrid tea rose plant. Alfred J. Fraser, Queensferry, England, assignor to Bees, Ltd., Liverpool. A new and distinct variety of hardy hybrid tea rose plant, characterized particularly

by its high-centered bud, deep crimson blooms, with rich velvetlike pile, borne singly and being of large size, five and one-half to six and one-half inches in diameter when fully open, displaying broad petals and numerous stamens of golden-yellow coloration; leaves each composed of from five to seven olivegreen leaflets, oval in shape and with toothed edges, and green twigs bearing straight red triangular thorns and tapering to a point.

# Stan Says \_

Two unusual evergreens are Pinus cembra (Swiss stone pine) and Picea polita (tiger's-tail spruce). These make attractive specimens, and anyone desirous of these should be willing to pay a good price. I have seen a fine Pinus cembra (four miles west of Eric, Pa.) in sandy, gravelly soil. Picea polita has the stiffest leaf structure of any of the conifers. It does not grow fast and will thrive in a heavy soil. Both conifers have erect vertical stems. You cannot see through the growth of the Pinus cembra, but you can see through the Picca polita.

If you want a smartly tailored evergreen that does not have to be pruned to give it that B. Altman & Co. Fifth avenue look, by all means select Pinus cembra. If your customer likes tweeds, he will go for tiger's-tail spruce.

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Per 1000

2/16 to 3/16-in. cal., 10 to 15 ins.\$15.00 3/16 to 1/4-in. cal., 15 to 18 ins... 22.00

Plants will be top and root trimmed prior to shipping. All prices F.O.B. Elsberry. No packing charge.

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#### NEW YORK MEETING

[Continued from page 16]

is water loss. Cuttings under mist lose little if any water, but cuttings in a sweatbox often lose so much water that they wilt. One reason for the higher water loss in the sweatbox is that the temperature is 10 to 15 degrees warmer than in the mist technique. The cuttings under mist are cooled by the fine spray of water.

"Another consequence of the higher temperature in the sweatbox," Mr. Hess stated, "is that stored food is probably used at an increased rate and cuttings do not have enough reserves left for proper rooting. Finally, the use of mist permits rooting in full sunlight, while the sweatbox must be shaded to keep temperatures within reasonable limits. Since relatively high light intensity coupled with moderate temperature is essential for the manufacture of food, the cuttings under mist are able to build up food reserves at a greater rate than those in a sweatbox.

Dr. William E. Snyder, of the university's floriculture and ornamental horticulture department, guided nurserymen on a tour of outdoor propagating beds in which experiments on mist propagation are being conducted. Dr. Snyder also showed experiments in progress on teuchrium and other plants which had been taken from the cutting bench in winter as rooted cuttings and stored in polyethylene bags in cold storage for spring planting. No injury occurred from holding the cuttings in the polyethylene bags for this length of time.

During the afternoon, the nurserymen were led on a tour of a modern apple storage unit which featured the most efficient possible insulation and temperature and humidity control for successful storage of the fruit. Apples removed from this storage unit after 10 months have retained their freshly ripened characteristics for a week or more before softening.

The nurserymen were then shown

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Fall. 1954

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nursery stock stored in Leverpak drums and in polyethylene in their second year of growth after planting on June 15, 1953. The stock was defoliated in October, 1952, and stored at 31 degrees Fahrenheit during the winter. Similar results were obtained by Dr. Pridham from 1953 digging and closed atmosphere storage of stock till July 15, 1954.

#### **Evaluating Herbicides**

Methods of screening herbicides and other chemicals to determine their effect on weed seeds, soils, dormant nursery stock and foliated stock were shown by Dr. A. M. S. Pridham and Robert Hsu. Dinitro formulations were shown to injure young and mature foliage. Crag Herbicide I did not cause injury to foliage and gave relatively good weed control. Chloro IPC 1:50 at 200 gallons to the acre of nursery row or one gallon of spray mix to 100 feet of row did not injure mature foliage of nursery stock, including evergreens, and gave efficient weed control for periods of five months and more when treated soil was left undisturbed. Dinitro formulations were equally persistent, of more rapid action than Chloro IPC, but injured juniper foliage in some cases. CMU, applied at three pounds to the acre during the dormant season or later, gave excellent weed control over a period of three months on a loamy soil. Previous tests have indicated some injury to nursery stock.

Tests of various selections of elm were shown by Dr. Francis Holmes. The use of antibiotics did not prove particularly successful in protecting American elm from Dutch elm disease in these tests.

"Deer Fly," advertised the past year for deterring deer from browsing on nursery stock, has not proved to be of outstanding value in tests by Harold Kline, of the department of conservation.

The final part of the day's tour was a visit to the Cornell rose gardens, a unit of the American Rose Society's test gardens.

#### **Exhibits**

Exhibits of interest to New York nurserymen were staged at Statler Hall by Ernest F. Schaufler, who prepared a series of bulletins on 4-H Club landscape projects. The exhibit included photographs of 4-H nursery field days at Stedman Nurseries, Newfane, and at Shepard Nurseries, Skaneateles. Prize-winning plans, plantings and flower arrangements of the recent state-wide

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			All	izes listed below are 60 per cen	t or more with bloor	n buds.	
30	to	36	ins.,	&B, 2-yr &B, 2-yr B, 2-yr		3.50	2.25 3.00 4.00

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ut of 2½-in. rose pots, on own roots. Per 100 Per 1000 3 to 4 ins..... \$ 60.00 \$ 550.00 Shipped in Dixie cups same size as pots. Order not less than 25.

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# **SHRUBS**

Abelia grandifiora,	00 00 00 00 00 00 00
Althaea, pink, purple, red and white, 2 to 3 ft 4.00 35.  Buddleia—Charming, Crimson King, He de France and Mt. Everest, white, 2-yr. No. 1	00 00 00 00 00
Althaea, pink, purple, red and white, 2 to 3 ft 4.00 35.  Buddleia—Charming, Crimson King, Ile de France and Mt. Everest, white, 2-yr. No. 1	00 00 00 00 00
Althaea, pink, purple, red and white, 2 to 3 ft 4.00 35.  Buddleia—Charming, Crimson King, Ile de France and Mt. Everest, white, 2-yr. No. 1	00 00 00 00 00
and white, 2 to 3 ft	00 00 00 00 00
Buddleia — Charming, Crimson King, Ile de France and Mt. Everest, white, 2-yr. No. 1 3.50 30.0 Deutzia—Crenata and Pride of Rochester 2 to 3 ft. 3.50 30.4 to 6 ft. 5.50 45.4 to 6 ft. 7.50 70.0 Deutzia gracilis and gracilis rosea, 12 to 15 ins. 4.50 40.0 Dogwood, Red Stem. 2 to 3 ft. 3.50 30.3 to 4 ft. 5.50 45.3 to 4 ft. 5.50 45.5 to 3 ft. 5.50 45.5 to 5 ft. 5 f	00 00 00 00 00
Deutzia — Crenata and Fride   of Rechester   2 to 3 ft.   3.50   30.0   3 to 4 ft.   5.00   45.0   4 to 6 ft.   7.50   70.0	00 00 00 00 00
Deutzia — Crenata and Fride   of Rechester   2 to 3 ft.   3.50   30.0   3 to 4 ft.   5.00   45.0   4 to 6 ft.   7.50   70.0	00 00 00 00 00
Deutzia — Crenata and Fride   of Rechester   2 to 3 ft.   3.50   30.0   3 to 4 ft.   5.00   45.0   4 to 6 ft.   7.50   70.0	00 00 00 00 00
Deutzia — Crenata and Fride   of Rechester   2 to 3 ft.   3.50   30.0   3 to 4 ft.   5.00   45.0   4 to 6 ft.   7.50   70.0	00 00 00 00 00
of Rochester 2 to 3 ft. 3.50 30. 3 to 4 ft. 5.60 45. Deutzia gracilis and gracilis rosea, 12 to 15 ins. 4.50 40. Dogwood, Red Stem. 2 to 3 ft. 3.50 30. 3 to 4 ft. 5.60 45.	00 00 00 00
2 to 3 ft. 3.50 30.1 2 to 4 ft. 5.60 45.1 4 to 6 ft. 7.50 70.0 4 to 6 ft. 7.50 70.0 9 to 15 ft. 8.50 40.1 9 to 3 ft. 8.50 40.1 2 to 3 ft. 8.50 30.3 3 to 4 ft. 5.60 40.1	00 00 00 00
3 to 4 ft. 5.00 45.4 to 6 ft. 7.50 70.1 Deutzia gracilis and gracilis rosea, 12 to 15 lns. 4.50 40.1 Dogwood, Red Stem, 2 to 3 ft. 3.50 30.4 3 to 4 ft. 5.00 45.5	06 06 06 06
4 to 6 ft. 7.50 70.1  Deutzia gracilis and gracilis rosea, 12 to 15 ins. 4.50 40.1  Dogwood, Red Stem, 3.50 30.1  2 to 3 ft. 3.50 45.	00 00 00
Deutzia gracilis and gracilis rosea, 12 to 15 ins.         4.50         40.           Dogwood, Red Stem.         2 to 3 ft.         3.50         30.           3 to 4 ft.         5.00         45.	00
rosea, 12 to 15 ins	00
Dogwood, Red Stem, 2 to 3 ft	00
2 to 3 ft	00
3 to 4 ft	00
3 to 4 ft	
4 to 6 ft	90
Forsythia compacta nana	
Dwarf. Excellent dwarf	
shrub, useful where low-	
growing plant material is	
required. 18 to 24 ins 5.50 50.0	m
Forsythia - fortunei, inter-	200
media, spectabilis and sus-	
media, spectabilis and sus-	040
pensa, 2 to 3 ft	
3 to 4 ft 5.00 45.0	
4 to 6 ft 7.50 70.0	H
Foreythin Spring Glory.	
2 to 3 ft 4.50 40.0	H
Forsythia Spring Glory,	
3 to 4 ft 6.00 55.0	
Hydrangea P. G., 2 to 3 ft., 5.50 50.0	90
Lilac, Common Purple,	
2 to 3 ft 5.00 45.0	06
Lilac, Common Purple,	
3 to 4 ft 6.50 60.6	no.
Philadelphus virginalis,	
2 to 3 ft 4.50 40.0	90
Rosemary Willow, 2 to 3 ft. 3.50 30.0	
Rosemary Willow, 3 to 4 ft. 5.00 45.0	
	340
Snowball-Common and	0.0
Japanese, 2 to 3 ft 7.00 65.0	PU
Snowberry (Symphoricarpos	
racemosus), 2 to 3 ft 3.50 30.0	м
Spiraea Anthony Waterer,	
12 to 15 ins 3.50 30.0	90
Spiraea Anthony Waterer,	
15 to 18 ins 4.50 40.0	96
Spiraca—Reeves and	
Billiardi, 2 to 3 ft 4.50 40.0	10
Spiraea, Van Houtte.	-
Spiraea, Van Houtte, 18 to 24 ins 2.50 20.6	10
2 to 3 ft	
3 to 4 ft	
3 to 4 ft	P. S.
w nterperry (Hex	M
verticillata), 2 to 3 ft 7.50 70.0	
Winter Jasmine, 2-yr 6.00 55.0	
Waits for Pres Copy of Our Commists	w
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Wholesale Price List.	JU

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\$1.00 each.

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contest sponsored by the New York State Nurserymen's Association were shown.

Donald Bushey, professor of landscape extension, displayed a model home placed on a felt ground over a magnetized metal sheet. Scale models with metal base were used to illustrate correct placing of such major landscape units as trees, hedges and the like. The models will be used in televised landscape teaching.

#### Directors Meet

The directors of the New York association met on the evening of August 24, and heard reports on the work of several major committees. The legislative committee reported that the association's contacts at Albany, in reference to legislation on landscape contracts and the truck mileage tax, are being continued. The vigilance of the legislative committee in keeping in touch with new legislation was noted.

A committee was appointed to work with Robert Kessler, Alfred, in the matter of nursery activities at the former conservation nursery at Big Flats and at the agricultural and technical institute at Alfred.

Dr. Arthur Bing reported completion of a greenhouse unit at the ornamentals research laboratory, of the New York State College of Agriculture, at Farmingdale. He stated that the next project is the construction of a cold storage unit.

H. B. Little, director of the bureau of plant industry, Albany, reported on present status of the Japanese beetle and other insects. He suggested that work be done by agricultural engineers to perfect equipment for injection of chemicals into the soil for fumigation purposes.

The directors went on record as authorizing a committee to visit Professor MacDaniels concerning the work already accomplished at the ornamentals research laboratory at Farmingdale and to discuss the assured continuance of such work by appropriate means.

The final day of the meetings was held at Geneva. Seventy nurserymen toured the New York state agricultural experiment station. Highlights included viewing the field trials held by the seed-testing laboratory.

GREEN THUMB NURSERY, 21420 Sherman way, Canoga Park, Calif., held a barbecue demonstration recently, at which cooked chickens and roasts were given to some of the attendants.

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30 to 36 ins. 2.50
36 to 42 ins. 3.25
42 to 48 ins. 4.00
4 to 5 ft. 5.50

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4 to 6 ft., B&B specimen plants for landscape work, **75c** per foot.

Bed liners, branched, 50c each.

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From 31/2x4-in. rose pots; potted spring of 1953. Carried under lath with overhead irrigation.

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Nothing shade-grown except the rooted cuttings and the Mahonia Bealei seedlings which are under light

All go through the winter unprotected and dormant-ready to curst into normal growth for you next spring.

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BG means bed-grown, F means field-grown. RC means rooted cutting. S means seedling. WC means softwood cutting. means transplanted.

All prices are given in cents per each.

ABELIA EDWARD GOUCHER-T, F, 8 to 12 ins., 18e; 12 to 15 ins., 22e; 2-yr., T, F, 15 to 18 ins., 30c.

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15e; 12 to 18 ins., 20e; 2-yr., T, F, 18 to

ABELIA GRANDIFLORA—T, F, 8 to 12 ins., 15e; 12 to 18 ins., 20e; 2-yr., T, F, 18 to 24 ins., 30e.
BERBERIS JULIANAE—T, F, 4 to 6 ins., 15e; 6 to 9 ins., 22½e; 9 to 12 ins., 30e.
BERBERIS MENTORENSIS—RC, 8e; T, F, 6 to 9 ins., 15e; 9 to 12 ins., 20e; 2-yr., T, F, 12 to 15 ins., 25e.
BERBERIS SARGENTIANA—T, F, 6 to 9 ins., 20e; 9 to 12 ins., 20e; 2 to 15 ins., 30e.
BUXUS SEMPERVIRENS—T, F, 4 to 6 ins., 10e; 6 to 8 ins., 15e.

BUXUS SEMPERVINENS—T, F, 4 to 6 ins., 10c; 6 to 8 ins., 15c; CHAENOMELES—(CYDONIA), hybrid, upright, rich red, nonfruiting—BG, 6 to 9 ins., 10c; 9 to 12 ins., 15c.
CHAENOMELES—(CYDONIA), hybrid, deep pink—BG, 6 to 9 ins., 10c; 9 to 12 ins., 15c.
CHAENOMELES (CYDONIA) LAGENARIA
ALBA, pure clear white—BG, 6 to 9 ins., 12c; 9 to 12 ins., 17½c
ELAEAGNUS FRUITLANDI—BG, 6 to 9 ins., 12c; T. F., 9 to 12 ins., 16c; 12 to 15 ins., 20c.

ins., 20c, ELAEAGNUS PUNGENS REFLEXA—T, F, 9 to 12 ins., 16c; 12 to 15 ins., 20c. EUONYMUS ALATUS COMPACTUS—RC, 7c.

EUONYMUS FORTUNEI CARRIEREI (True)—T. F. 4 to 6 ins., 15c; 6 to 9 j

EUONYMUS JAPONICUS-T, F. 8 to 12

ins., 20c, EUONYMUS KIAUTSCHOVICUS, Largeleaf patens—RC, 6c; T, F, 9 to 12 ins., 15c; 12 to 15 ins., 20c; 2-yr., T, F, 12 to 15 ins., 25c; 15 to 18 ins., 35c. EUONYMUS KIAUTSCHOVICUS, Small-leaf patens—RC, 6c; T, F, 9 to 12 ins., 15c; 12 to 15 ins., 20c; 2-yr., T, F., 15 to 18 ins., 35c.

35c.
GINKGO BILOBA—S, F, 4 to 6 ins., 6c; 6 to 8 ins., 8c; 2-yr., S, F, 12 to 18 ins.,

TNGO BILODA—S, F, 4 to 6 ins., 6c; 6 to 8 ins., 8c; 2-yr, S, F, 12 to 18 ins., 17½c; 18 to 24 ins., 25c.

HYDRANGEA P.G.—T, F, 12 to 15 ins., 15c,

ILEX CORNUTA—RC, 8c; BG, 6 to 8 ins., 12½c.

ILEX CORNUTA BURFORDI—RC, 8c; BG, 6 to 8 ins., 12½c. 6 to 8 ins., 121/2c; 8 to 12 ins., 15c. ILEX CRENATA CONVEXA (BULLATA)—

RC, 7c.

ILEX CRENATA ROTUNDIFOLIA—RC, 7c;

RG. 4 to 6 ins., 12½c; 2-yr., BG, extra BG, 4 to 6 ins., 12/ge; 2-yr., BG, extra heavy 8 to 12 ins., 30c. ILEN HOWARDI—RC, 15c; BG, 6 to 9 ins., 20c; 3 to 12 ins., 30c. ILEN YOMITORIA FEMINA—T. F. 6 to 9

ILEX VOMITORIA FEMINA—T. F. 6 to 9 ins., 20c; 9 to 12 ins., 30c.

JASMINUM FLORIDUM—BG, 6 to 8 ins., 7c; 8 to 12 ins., 10c; T. F. 12 to 18 ins., 20c; 18 to 24 ins., 30c; 18 to 24 ins., 30c; 18 to 24 ins., 30c; 17 F. 12 to 18 ins., 20c; 18 to 14 ins., 30c; T. F. 12 to 18 ins., 20c; NOTE—All Juniperus from small, greenhouse type, cuttings transplanted to field.

JUNIPERUS HETZI—T. F. 9 to 12 ins., 22½c; 12 to 15 ins., 35c. JUNIPERUS HORIZONTALIS PLUMOSA (Andorra)—T. F. 6 to 9 ins., 17½c; 9 to

ins., 45c, LIGUSTRUM LUCIDUM—BG, 6 to 9 ins., 15c; 9 to 12 ins., 20c; T, F, 12 to 18 ins.,

LIGUSTRUM SINENSE PENDULUM (Weeping Privet)—BG, 6 to 8 ins., 8c; 8 to 13

ing Privet)—BG, 6 to 8 ins., 504 s suitains., 160.

MAHONIA BEALEI—1-yr., seedlings suitable for potting, fall, 5c; spring, 6c.
PRUNUS CAROLINIANA (Laurel Cherry)—
S, F, 4 to 8 ins., 6c; 8 to 12 ins., 8c.
PRUNUS LAUROCERASUS OFFICINALIS
(English Laurel Cherry)—RC, 16c.
PRUNUS LAUROCERASUS SCHIPKAENSIS
(Hardy Laurel Cherry)—RC, 16c; T, F, 6
to 8 ins., 26c; 5 to 12 ins., 36c.

SPIRAEA ANTHONY WATERER—T, F,
Bushy, 4 to 6 ins., 16c; 6 to 5 ins., 15c; 5
to 12 ins., 26c.

Bushy, 4 to 9 thm, 1967, to 12 thms, 296.
VIBURNUM BURKWOODI—SWC, T, F, own root, 8 to 12 thms, 296; 12 to 18 ins., 35c, VIBURNUM RHYTHIOPHYLLUM—RC, 196; T. F. 6 to 9 ins., 29e; 9 to 12 ins., 39c.

Order now from the list above. If you don't see your variety there, tell us what you are interes, ed in. We have smaller quantities of numerous other varieties and sizes

U.S. HWYS. 64-41A WINCHESTER - TENNESSEE

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FREE PACKING: Rooted cuttings and liners in sphagraum moss and plastic sheet. F.O.B. Winchester, Tenn. Include payment covering parcel post charges; otherwise shipped express collect. Established accounts—net 30 days. Strictly wholesale. Write on letterhead or send

#### TOP GRAFTING WITH PLASTICS

[Continued from page 19]

tion B, page 19). Thus, the entire scion and union are encased in the plastic tubing. Next, a small wad of damp (not wet) sphagnum is placed into the tube and packed lightly down around the union at the bottom of the gathered tube. Do not pack the sphagnum hard but leave it light and fluffy so that air can move easily around the union tissues. A teacup of sphagnum is plenty, even for the largest application. The purpose of the sphagnum is simply to furnish humidity within the unit

After insertion of the sphagnum draw the top of the tube around the stock-shoot and tie it securely. In all my tying operations I use plastic tape, as it will not strangle, needs no attention and is unaffected by the elements. Twine can be used as can raffia, of course, but either of these must be watched to see that strangulation of the plant does not

The third step consists of simply draping a thin muslin cover over the entire unit to prevent sunburn during the formation of the union. If desired, this shade can be in the form of a tube (like the plastic tube)

and may simply be slid on and secured the same as the plastic tube. (See illustration C, page 19.)

No further attention is required until the scion starts to grow, at which time a little air should be admitted by simply loosening the top tie and re-tying it so that the top gaps open. After a few days more the top tie should be removed completely, and the shade cloth can come off at this time. (It is always best to remove any shade on the morning of a cloudy day if possible, so that the plant can harden somewhat before exposure to full sunlight.) After a few days more, the tube and sphagnum should be removed completely, but the binding on the union should not vet be removed. If a nonflexible binding has been used, it should be removed and replaced with a looser application to give the tissues a chance to expand. The reason for not removing the union binding at this stage is that the union tissues are still soft and immature, and the binding is needed for hardening and support. This binding should be left on for several weeks after the growth of the scion has started, to prevent breakage of the union.

Snagging (cutting away the original stock top) will be governed by

FRUIT TREES (also Dwarf) SMALL FRUITS . NUT TREES FLOWERING TREES SHADE TREES . SHRUBS **EVERGREENS** HEDGES . VINES

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#### FLOWERING SHRUBS & ORNAMENTAL TREES 1000 Abelia Grandiflora (Glossy Abelia) 4 to 6 ins., C .. field-grown .....\$ 4.50 \$ 40.00 6 to 12 ins., C., field-grown 6.50 60.00 12 to 18 ins., C., 80.00 field-grown 8.50 18 to 24 ins., 3 br. and up 25.00 200.00 to 3 ft., 4 br. and up. 50.00 Hydrangea Paniculata Grandiflora (Peegee Hydrangea) \$ 4.00 \$30.00 2 to 3 ft., 4 br. and up. 25.00 Spiraea Vanhouttei Van Houtte Spiraea) 2 to 3 ft., 4 br. and up. 20.00 100.00 100 Cornus Florida (White Flowering Dogwood) 2 to 3 ft., well-br. .... \$ 4.50 35.00 3 to 4 ft., well-br..... 7.00 60.00 4 to 5 ft., well-br..... 10.00 90.00 5 to 6 ft., well-br..... 14.00 130.00 6 to 8 ft., well-br. 19.00 180.00 (Add 50c per plant for B&B) NATIVE EVERGREENS Collected stock Rhododendron Maximum, Kalmia Latifolia, Ilex Opaca, Tsuga Canadensis Per 100 Per 1000 \$20.00 3 to 6 ins., S......\$2.50 30.00 6 to 9 ins., S..... 3.50 9 to 12 ins., S..... 5.50 3.50 50.00 **CUMBERLAND PLATEAU NURSERY** CROSSVILLE. TENN.

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#### ROSEMARY WILLOW

(Salix Rosmarinifelia)

Very attractive fine-textured specimen shrub.

John narrow linear leaves, bluish-green above,

white underneath. Stems rich malogany. Com
act upright growth.

Available in 1-yr, stock only...\$1.00 each.

BEARDSLEE NURSERY

PERRY, O.

the size of the stock plant used in the operation. It may be possible to remove entirely the stock top of a young tree in one season, but where older stocks are used this removal will have to be spread over two or more years to prevent destruction of the balance between top and rootsystem. When large stocks are used the snagging should be accomplished by removing the branches from the bottom up, which process forces the sap up to the scion. A further forcing of growth to the scion can be accomplished by shearing the new growth of the remaining stock top just as a hedge would be sheared. This prevents further development of the stock plant, but leaves sufficient leaf surface to feed the root system until the scion has attained sufficient leafage to take over the job.

Because this technique starts with a well-developed root system and the only desire is to develop a new top, one can obtain a good-size specimen in but a fraction of the time required to develop a complete plant. Because the job can be done on the spot, there is no secondary shock and setback from transplanting, an occurrence which often destroys grafted plants. The stocks for this operation can be carried in tubs, when desired, for ease of handling or moving.

This technique was designed for open-air application under full sun and is best applied thus for several reasons. When plants are propagated out of doors, there is little trouble with destructive fungus diseases, molds, etc., because all the rays of the sun penetrate these plastic materials and prevent the development of these troubles. Because the ultraviolet rays penetrate the plastic the scion does not become sensitive to these rays, as is the case with propagation under glass, and since the plant is accustomed to the sun there is little danger of sunburn. The gas permeability of the plastic material allows breathing during the operation so that there is no suffocation of the enclosed material. This factor leads to the development of clean healthy union tissues which facili-tates free movement of sap between the scion and stock and gives rapid and healthy plant development.

#### Time Required

There would appear to be a considerable period of time from the beginning of these experiments to their presentation to nurserymen, but one must remember that plants, and trees in particular, grow slowly,

#### SPECIMEN B&B EVERGREENS FOR FALL

1000 Canadian Hemlock 21/2 to 3 ft. 3 to 31/2 ft. 31/2 to 4 ft.

3000 Junipers Blue Hetz: Standard Pfitzers, Golden and Compact 18 to 24 ins.

2 to 21/2 ft. 1000 Taxus

In various varieties and sizes.

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These trees, shrubs, evergreens and roses are single root-wrapped with the best waterproof paper, and we use moss and shingle tow mixed for packing the roots of each plant. They are tagged with colored tags showing each plant in natural color, ready to display on your counters for resale, also for road stands. Write us for special prices on truckload or carload lots.

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and that a great many experiments have been made during this period to determine the best type of material, the proper density for proper gas movement, the effectiveness of this method on varied types of plants and the all-important consideration, what the after development of the plant will be.

No technique would be worth the space required to write about if the plants so produced did not develop into healthy beautiful specimens which were a definite credit to their race. These desirable considerations are so thoroughly realized using these plastic techniques that they form the basis for the author's enthusiastic acceptance of them over conventional methods.

Although we now know much concerning the startling abilities of plastics in horticulture, we must remem-ber that most of these plastic materials are only a few years old, and that the full range of their capabilities can only be guessed. However, of one thing we are sure: We are going to have better plants, more quickly and more easily, with the aid of plastics.

#### TEXAS CONVENTION

[Continued from page 8]

The first portion of Tuesday morning's program was sponsored, as is customary, by the Texas Landscape Association, which presented Prof. Hideo Sasaki, assistant professor of regional planning and landscape design, Harvard graduate school of design, Harvard University, Boston, Mass., and W. Hal McGraw, vicepresident of the Texas Home Builders Association, Dallas. Professor Sasaki gave an informative talk on city planning and modern design, which was illustrated by slides. Mr. McGraw discussed the status of the FHA housing program and then pointed out that it would greatly benefit nurserymen, as 1,200,000 homes are expected to be started this year, the second largest number of homes in any year since World War

Before adjournment of the morning session, Chairman Jack Jones, of the constitution and bylaws committee, passed out to members a prospectus on proposed changes in the bylaws and dues payments and called for a preliminary ballot by nursery firms on the measures.

During the afternoon conventioners divided into three groups for discussion purposes-a landscape group; a wholesalers and rose growers' group, and a retailers' group. At the landscape session colored slides of

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LINDLEY NURSERIES, Inc. P. O. Box H GREENSBORO, N. C. landscape projects were shown, and Professor Sasaki, guest speaker at the convention, was given the floor and freely criticized the different plantings in a most constructive way.

Nurserymen convening at the wholesalers' session heard an address by L. L. Baumgartner, representing Nursery Specialty Products, Inc., Croton Falls, N. Y., who discussed three products for nursery use—Wilt-Pruf. Endothal and Cvanamid.

The retail nurserymen held a discussion of the advantages and disadvantages of the complete garden center. The consensus was that the complete garden center is the coming thing, and, even if only a small profit is made on garden accessories, it is worthwhile to carry them to stimulate customers to call at the nursery for all gardening needs. A plan for a uniform gift certificate was discussed, and the matter of a uniform guarantee was considered, with recommendations formulated on both subjects and referred later for action by the general membership.

#### Past Presidents' Banquet

The annual past presidents' banquet was held Tuesday evening in the ballroom of the Hotel Texas. Ten past presidents of the Texas association and their wives were present for the occasion. Frank Cornelius presided as master of ceremonies and presented three T. A. N. special awards for outstanding service to John L. Botter, Alvin; Ralph Ellis Gunn, and A. R. (Bud) Pate, Fort Worth. Mr. Botter received his award for service as the past year's membership chairman: he brought in 14 new members. Mr. Pate received his award for work as general chairman of the convention and also for work as a membership captain, with the introduction of 16 new members to his credit. Mr. Gunn's award was for service as chairman of the research and education committee.

James Fitzpatrick, Sherman, then made the presentation of the Arp award, as he was the recipient of the 1953 award. The Arp award is given annually for outstanding service to the nursery industry of Texas. Mr. Fitzpatrick presented the 1954 Arp award to Clark Kidd, Arp Nursery Co., Tyler, stating in his presentation of the huge engraved silver bowl that it is "no longer an Arp award, but a T. A. N. award."

James Lauden then presented the annual past presidents' award, a beautifully engraved plaque, to the outgoing president of the T. A. N., Frank S. Cornelius.

The final sessions of the convention were held Wednesday morning,



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August 25. Notable business of the morning was consideration of the recommendations which developed from the retail session of the trade meetings regarding (1) a plan for a uniform gift certificate for T. A. N. members and (2) a plan to establish a uniform policy on adjustments and replacements of nursery stock. The recommendations were referred to the board of directors for further action.

Curtis Porterfield, A. A. N. administrative assistant, spoke to the assemblage on current problems on the national level, touching briefly on such matters as pending transportation and parcel-post legislation, foreign plant imports, plant patent regulations and other matters of concern to the trade. He announced that a new TV film in color about the nursery industry is being prepared. It will be the first of a series and will deal with landscaping the home grounds.

President Cornelius announced that L. A. Dean had accepted an appointment by the board of directors as general chairman of the 1955 convention, which will be held at Tyler.

After a spirited campaign involving four invitations from Texas cities, Houston was selected as the 1956 convention city.

President Cornelius announced that a "Plant Texas" program is being set up and may possibly be launched in conjunction with the Texas rose festival, in October.

Mancill Allen advised that a chapter of the National Landscape Nurserymen's Association is being formed encompassing the same territory as region 5 of the A. A. N. He urged members doing landscape work to join.

After a brief message by incoming President Gene Howard, the 1954 convention was adjourned.

#### LANDSCAPE GROUP MEETS

Two meetings set aside for business of the Texas Landscape Association were held in connection with the annual T. A. N. convention. These were the annual midyear business meeting of the association and the meeting of the executive committee.

The membership in the association has increased 25 per cent since the 1953 midyear meeting, as a result of a concentrated membership drive.

This year the association designed a beautiful garden display for the convention in the lobby of the Hotel Texas,



EVERGREENS, by L. L. Kumlien. How to select, plant and care for evergreens. 91 p., illus. \$1.50 postpaid. American Nurseryman, 343 S. Dearborn St., Chicago 4, Ill.

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#### LOS ANGELES ELECTS

Election of officers for the coming year and a discussion of the California Association of Nurserymen's group insurance program featured the regular meeting of the Los Angeles chapter, held August 25 in the dining room of Carpenter's Santa Anita restaurant, Arcadia.

Elevated from the vice-presidency to head the group for the next year was O. L. Weeks, Weeks Wholesale Rose Grower, Ontario, a member of the chapter's board of directors since 1952. Mr. Weeks has been active in association business for years as a member of both the Los Angeles and Inland chapters and is also a member of the American Association of Nurserymen and All-America Rose Selections.

Replacing Mr. Weeks as vice-president is Lynn Mossholder, Mossholder Nursery, El Monte, who specializes in the wholesale growing of azaleas. He has served the chapter for many years as a director and once was treasurer. Retained for another term in office as secretary and treasurer, respectively, are Jim Meadows, manufacturer's representative, Altadena, and Ralph P. Klages, Coolidge Rare Plant Gardens, Pasadena.

Holdover directors retained are Ernie Bordier, Bordier's Nursery, Covina, and Charles Crum, general manager of Rosedale's Nurseries, Monrovia. New directors selected who will assume office in October are Harold Betts, owner of Betts Nursery, Anaheim; Norman Springer, sales manager for Bandini Fertilizer Co., Los Angeles; Mark Paulson, Monrovia Nursery Co., Monrovia; Jim Perry, Perry's Plants, Montebello, and Les Marshall, Marshall's Camellia Nursery, San Gabriel.

As the featured speaker on the program, Pressley Neville Jones, group insurance representative for the C. A. N., discussed the plan that is now in effect in 15 chapters of the state association. From an outline of the general benefits of the plan, he explained thoroughly each benefit, inviting questions from the audience on any point needing clarification. In closing, Mr. Jones presented recent changes in the plan undertaken

by the board of trustees to broaden the benefits.

He commended the board of trustees for their foresight in the rearrangement of the benefits. Chairman of this group is Lynn Mossholder. Other members are Ralph P. Klages; David L. Cunningham, Descanso Distributors, Chino; Robert E. Weidner, Buena Park Greenhouses, Buena Park, and Martin Usrey, Monrovia Nursery Co. Monrovia

Nursery Co., Monrovia.

Guests at the meeting with Mr.
Jones were representatives of two of
the insurance companies participating in the group plans. They were
Carl Woodward, group manager,
Lumberman's Mutual Casualty Co.,

and Fred Ferguson, group manager, Washington National Life Insurance Co., both of Los Angeles.

Ed. McNeill

#### PENINSULA GROUP ELECTS

Members of the Peninsula chapter of the California Association of Nurserymen elected a new slate of officers at their August 12 meeting, held at the Chukker, San Mateo. The slate proposed by the nominating committee and presented by James H. Wilson, chairman, was adopted without change, as follows: William E. Schmidt, Schmidt Nursery, Palo Alto, president; Walter Borchers, W. B. Clarke & Co., San Jose, vice-president, and John Coulter, Coulter's Nursery, San Carlos, secretary. Juel Christensen, treasurer since the chapter was chartered. will serve another term in that capacity.

New directors will be Ralph Davey, the Flower Garden, Palo

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Alto; Walter Prehn, Floral Arts Nursery, San Francisco, and Ernest Uenaka, Cupertino Nursery, Cupertino. Ernest Esch, retiring president, will become a director for a 2-year term.

The program honored James H. Wilson, first president of the chapter and current president of the California Association of Nurserymen. He was presented with a handsome leather case suitable for carrying golf clothes, a gift from the members of the chapter. In responding to the tribute paid him by President Ernest Esch, Mr. Wilson reviewed some of the outstanding accomplishments of the chapter and discussed the progress made in public relations during his term of office as president of the state association.

#### FIRE BLIGHT CONTROL

Fire blight, century-old plague of fruit trees, has been virtually wiped out in large scale commercial orchard tests employing a spray of the antibiotic drugs terramycin and streptomycin, John C. Dunegan, a United States Department of Agriculture scientist, announced at a meeting of the American Phytopathological Society held August 27 at Estes Park, Colo.

Mr. Dunegan said that the antibiotics gave 98 per cent control of the disease. This was the first successful large-scale commercial trial with antibiotic drugs. Four other leading plant scientists corroborated Mr. Dunegan's conclusions.

For the experiments, 600 bartlett pear trees were set aside in a 400-acre section of the DiGiorgio Orchards, Marysville, Calif. Half were sprayed with a mixture of the two antibiotics known as agri-mycin. The other half received a water spray. The inclusion of terramycin in the spray formula used by Mr. Dunegan was explained as a precaution against the possibility of the bacteria's developing a resistance to streptomycin alone and rendering it ineffective.

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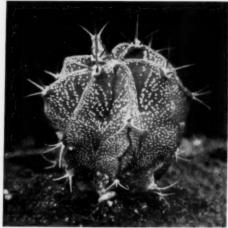
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#### SARATOGA FOUNDATION GIVES PROGRESS REPORT

A large group of interested nurserymen, educators and others met August 20 at the Saratoga Horticultural Foundation, Saratoga, Calif., for a report on the progress of this unique institution. The purpose, as given in the introductory remarks by the founder, was to give a visual demonstration of the work and to let the trade and other interested persons see not what was being done, but how. The foundation is a nonprofit research organization founded for the purpose of developing trees and shrubs which are suited to west coast conditions. The director is Maunsell Van Rensselaer.

The group toured the grounds for about an hour before collecting for a series of short talks by interested individuals. On the tour was seen the progress that is being made in the selection of desired types of certain trees and shrubs. This selection is the primary purpose of the foundation and while there is yet much to be done the results to date have exceeded the expectations of all concerned.

There is more to it than merely selection, however. It has been necessary to learn much about propagation, about pest control and soil and general cultural conditions that best suit the many different kinds of trees and shrubs under study. The solution of these latter problems has been the most difficult, and it is in these that the most progress has been made.

#### **Speakers**

Among the speakers, in addition to Mr. Van Rensselaer and Ray D. Hartman, the foundation's president, were Fred J. Oehler, treasurer of the foundation and an executive of the

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American Trust Co.; Lloyd Jorkensen, of San Jose Junior college; Harry Sheppard, head, department of landscape design, University of California; Robert Deering, chairman, division of landscape management, University of California, and Dr. H. E. Burk, retired entomologist, United States Department of Agriculture.

In his remarks Mr. Oehler told that the foundation has been entirely financed by Mr. Hartman, of Leonard Coates Nurseries, San Jose, Calif., and that he has done it all as a tribute to the trade which has been so good to him for so many years. He added that in the past year the foundation has, by limiting its activities, been running within its budget and that he felt there is so much to be done that he is urging the trustees to start a drive among the nonprofessional horticulturists for funds.

Professor Deering reported on the beginning of the second year of the division of landscape design at the Davis campus and reviewed the courses being offered there. The 4year program leads to a degree of bachelor of science.

Lloyd Jorkensen told of a new course in vocational horticulture being offered at the San Jose Junior

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college. It will meet two nights each week for two years beginning this September. In addition to the classroom work the students will be given on-the-job supervision by trained in various forms of horticultural endeavor.

After the tours of the grounds and the talks and excellent refreshments it seemed to be the thought of the hosts that the group would disperse but so interested were they in what they had already seen and heard that many stayed for a long time to continue their discussions. It is the general feeling in the horticultural trade in California that the Sara-toga Horticultural Foundation is one of the most ambitious and most valuable contributions that have been made to the science of horticulture and the nursery industry.

WATKIN & SIBBALD, San Anselmo, Calif., has been awarded two state contracts, one for improvement of the grounds at Paso Robles School for Boys and the other to develop Napa State hospital grounds.

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#### MORE EVERGREENS ON FARM

There has been a noticeable trend toward planting more evergreens on Idaho farms during the past 10 years. according to calculations made by the University of Idaho college of agriculture.

In 1943, evergreens comprised 12 per cent of the total trees ordered from the University of Idaho farm forestry nursery. By contrast, ever-greens made up 32 per cent of the past year's orders.

That figure has still more meaning when it is considered that the 1953 farm tree sales were 58 per cent greater than the sales of 10 years ago. Farmers bought about three times as many evergreens the past year as they did during 1943.

Farmers like the year-round protection the evergreens afford. Few farm windbreaks are planted now without at least one evergreen row. Many planted in recent years have been composed entirely of ever-

Farmer interest in Christmas tree production is another reason cited for the increase in the use of evergreens. Orders for Douglas fir, the chief Christmas tree species, were five times greater during 1953 than



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#### Phenyl Mercuric Acetate Aids Turf Maintenance

Root development of most turf grasses has shown benefit from the use of phenyl mercuric acetate, according to a Rhode Island study by agronomists J. A. Simmons and J. A. DeFrance. The chemical showed no adverse effects on the turf grasses while the control of crab grass and turf disease appeared to aid development of a dense healthy turf. This condition, the study showed, is apparently correlated with an active, healthy root

The study, begun at the Rhode Island experiment station in 1946, showed phenyl mercurials had no lasting harmful effects on turf, although some grasses discolored temporarily. The Colonial bent and fescue plants showed considerable

discoloration at a heavy rate of application, but Kentucky bluegrass showed only slight effect at the same rate. All discoloration disappeared when treatment was concluded.

Later tests were made to show the effects on root areas. These were conducted both in the greenhouse and in field plots. Table 1 lists the results on old grasses.

Results indicate that not enough phenyl mercuric acetate remains in the soil long enough to damage root development. A further comparison between phenyl mercuric acetate and potassium cyanate showed that at both heavy and light rates of application, there were more roots on phenyl mercury treated

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John Holmason & Sons, Props.

# Table I. Root weights of velvet bent grass and C-I bent grass maintained under putting green conditions and treated with $1\frac{1}{4}$ ounces of a 10 per cent solution of phenyl mercuric acetate per 1000 sq. feet of area.

Grass and Date Planted.	No. of Annual Applications	No. of Years Treated	Root Weights in Lbs., Per 1000 Sq. Ft. Area	
			Treated	Nontreated
Velvet bent 1938	6	4	237	174
Velvet bent 1951		2	97	87
C-I creeping bent 1940		3	140	131
C-I creeping bent 1951		2	109	90

#### Hawaiian FERNWOOD IREE TOTEM POLES

		-	-	_			
				Per		Per 1	0 ctns. or
	Size			ctn.	Wt.	ctn.	more, ea.
1	x1	x16	ina.	100	12	\$12.00	\$11.00
1%	x1%	x18	ins.	64	1.8	8.96	8.40
2	x2	<b>X18</b>	ins.	3.6	1.8	6.30	5.90
2	x2	x24	ins.	36	24	9.00	8.50
2	x2	x30	ins.	25	22	10.00	9.50
2	x2	<b>x</b> 36	ins.	25	25	11.75	11.00
3	23	<b>x</b> 36	ins.	9	20	9.00	
3	x3	<b>x48</b>	ins.	9	27	12.15	11.50
4	24	x48	ins.		22	9.36	9.00
4	24	x60	ins.	4	27	11.76	11.40
F	O.B	. W	ILM	ING	TON.	CALIF	ORNIA
	19	54 W	Phol	esale	Nue	sery Su	pply
	Ci	atale	og A	valle	ble o	n Requ	est.
	-		-			AII C	
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г.	O. I	Sox	216,	WI	LMI	NGTON.	CALIF.

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#### IOWA SUMMER MEETING

[Continued from page 15]

Much interest was shown also in the garden and gift shop located at Platt's Nursery. It is of modern design and has a protective bin arrangement used for display of bedding plants and geraniums in the early part of the season and for potted roses later. The nursery had experienced severe wind damage to plants placed in the open, and the protective bins with glass sides serve a real need. They have also proved to be of great value during rainy periods when damage to the blooms of bedding plants and such items as geraniums invariably occurs, especially during heavy downpours.

At the annual banquet, held in the President hotel, Waterloo, Dr. E. S. Haber, of Iowa State College, informed the gathering of the introduction of the new Black Hawk raspberry developed by the college. It was also announced that the Jonathen and Delicious cross, which has been watched with much interest in the college orchard during the past year, is now to be turned over to the nurserymen for propagation. The name Jonadel has been selected for it. Its outstanding features are resistance to fire blight, as found in the Delicious apple, combined with the outstanding quality and flavor of the Jonathan.

The next speaker, Dr. J. P. Mahlstede, also of Iowa State College, spoke on propagation in mist houses. He advocated that greater consideration be given to alternate misting through the use of timers and stated that his experience has shown that plants which thrive under a continuous mist seem to do equally well under an alternating mist. Ten seconds on and 20 seconds off, or 20 seconds on and 30 seconds off, during the daylight hours may prove as satisfactory as continuous mist and

considerably more thrifty. Dr. H. M. Harris, entomology department, Iowa State College, reported on current experiments in the control of red spider on evergreens and fruit trees. Of the materials tested, Malathion proved best for spider control. Aramite and Dimite were also most satisfactory but somewhat more expensive.

On the morning of August 26 the convening nurserymen were guests of John Deere & Co. and spent more than two hours viewing the manufacture of tractors from foundry to final assembly.

A smorgasbord dinner was enjoyed at 1 p. m. After dinner, a panel, headed by Harold Parnham, Robin-

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son & Parnham, Des Moines, dealt with the problems of modern landscaping. From this discussion came several ideas of importance. It was observed that, if a shrub is worth using in a border at all, it is worth using frequently enough so that the effect is striking, whether the plant is known for its bloom, foliage or wood. It was stated that tall trees in front and shorter ones in back heighten a low house; short trees in front and tall trees in back lower a house. The panel suggested serious consideration of the setting in which the modern home is placed. Mass corner plantings, with limited ac-cent around the entrance, were described as far more desirable than continuous plantings around the four sides of a home-a point on which the panel discussion concluded.

The matter of nursery guarantees was the final subject discussed, and the Waterloo nurserymen were complimented on their formulation of a uniform replacement arrangement and on the printed posters, which are prominently displayed stating their policy, at their places of busi-

#### VIRGINIA SUMMER MEETING

[Continued from page 18]

ing expedition, so it was never determined who should be given credit for the prize catch.

For those who preferred not to take to the water, there were tours of the local nurseries and the Mariners' museum. The museum is located in an attractive park and features an extensive collection of ships and models of ships, from some of the oldest to the most modern, together with displays of parts and equipment used on the ships.

The customary banquet and cocktail hour were held Monday evening. Murray Via, vice-president of the First National Exchange bank, Roanoke, Va., was the banquet speaker, taking as his subject, "What's Right for Virginia Nurserymen?" Mr. Via pointed out that gardening is America's greatest hobby. As Mr. Via owns a country home surrounded by azaleas and rhododendrons, he spoke of the pleasures of gardening from the standpoint of actual experience. He, too, urged the nurserymen to support the "Plant Virginia" program, to make the state more beautiful, to increase real estate values and by so doing to create more business.

MRS. J. OLIVER PRINCE, Tabor City, N. C., has recently opened a camellia and azalea retail business.

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HELP WANTED—Couple on nursery-farm 50 miles east of St. Joseph, Mich. Man interested in good future by promoting outlet connections for a new nursery and land-scaping business. Owner can do propagating but need help of interested worker to keep business continually rolling and increasing. Bankers helpful but revenue must grow. Wife to keep house and business records. Home and living furnished with per cent of profits. State additional salary expected. Give full qualifications and references in first letter. Opening October 1. Write Box 106, care of American Nurseryman.

SITUATION WANTED—Deaf, honest man of good habits wants year-round outdoor work, landscaping and horticulture, greenhouse growing and landscape gardening. High mechanical ability and artistic interest. My greatest 10y—to be with others. 4-year high shool education. Graduate of landscape architecture course, American Landscape School, Prefer mild climate. Write Box 100, care of American Nurseryman.

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Juniper, Blue Hetz, 6 to 12 ins	
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Taxus capitata, cuttings, 6 to 12 ins	
Taxus cuspidata, 4 to 6 ins	
6 to 12 ins	
Taxus hicksi, 4 to 8 ins	
8 to 12 ins	
Payne hilli nyramidalie 6 to 19 ine	
Taxus hilli pyramidalis, 6 to 12 ins Taxus hunnwelliana, 6 to 12 ins	
Taxus mooni, 6 to 12 ins	
Taxus mooni, 6 to 12 ms	
Thuja elegantissima, 6 to 12 ins	,
Th. occidentalis compacta, 6 to 12 ins Th. occ. douglasi aurea, 6 to 12 ins	,
Th. occ. douglasi aurea, 6 to 12 ins	
Th. occ. frenchi, 6 to 12 ins	
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Th. occ. pyramidalis, 6 to 12 ins Th. occ. wareana, 6 to 12 ins	
Th. occ. wareana, 6 to 12 ins	
Th. occ. woodwardi, 6 to 12 ins	
3-YR.	
Juniper, Andorra, 12 to 15 ins Juniper, Irish, 12 to 18 ins	
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Juniper, Pfitzer, 6 to 12 ins	
12 to 18 ins	
Inning Tomorie 10 to 10 to	
Juniper, Tamarix, 12 to 18 ins Th. elegantissima, 6 to 12 ins	
In, elegantissima, 6 to 12 ins	
12 to 18 ins	
Th. occ. elwangeriana, 6 to 12 ins	
Th. occ. frenchi, 0 to 12 ins	
12 to 18 ins	
Th. occ. nigra, 6 to 12 ins	
12 to 18 ins	
18 to 24 ins	
Th. occ. vervaeneana, 6 to 12 ins	
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Liners grown in outside beds fo	
3 years as specified.	
Azaleas: Amoena, Claret, Ethe Flame, Gaiety, Greeting, Her Hinodegiri, Hino-Crimson, Hinon and Salmon Beauty, 1-yr. Buxus arborescens, 2-yr. Buxus sempervirens, 1-yr.	Each lwyn,
Flame, Galety, Greeting, Her	bert,
and Salmon Beauty, 1-yr	\$0.25
Buxus sempervirens, 1-yr	20
Chamaccyparis anticia, a-yr	
Chamaecyparis pisifera, 2-yr	20
Chamaecyparis botusa, 2-yr. Chamaecyparis pisifera, 2-yr. Chamaecyparis plumosa aurea, 2-yr. Chamaecyparis pisifera aurea, 2-yr. Cotoneaster salicifolia, 1-yr. Lor auffolium 1-yr.	r20
Chamaecyparis pisifera aurea, 2-yr.	20
Cotoneaster sancifolia, 1-yr.  Ilex aquifolium, 1-yr.  Ilex aquifolium pyramidalis, 1-yr.	20
Ilex aquifolium pyramidalis, 1-yr.	50
llex cornuta (male), 1-yr Ilex cornuta (female), 1-yr Ilex cornuta burfordi, 1-yr	50
Hex crenata, 1-yr.	50
llex cornuca burrera, 1-yr. llex crenata, 1-yr. llex crenata, 2-yr. llex convexa, 1-yr. llex convexa, 2-yr. llex rotundifolia, 1-yr. llex glabra, 1-yr.	20
Ilex convexa, 2-yr.	15
Hex rotundifolia, I-yr.	15
Ilex opaca (female), 1-yr	50
Juniper, Armstrong, 2-yr.	35
Juniper, Hetz, 2-yr.	30
Juniper, Pfitzer, 3-yr	40
Ligustrum lucidum repandens, 1-yr Ligustrum lucidum erectum, 1-yr.	30
Ligustrum lucidum erectum, 2-yr.	35
llex opaca Arden, 1-yr. Juniper, Armstrong, 2-yr. Juniper, Hetz, 2-yr. Juniper, Pfitzer, 2-yr. Juniper, Pfitzer, 3-yr. Juniper, Pfitzer, 3-yr. Ligustrum lucidum recetum, 1-yr. Ligustrum lucidum recetum, 1-yr. Commanthus aquifolium, 1-yr. Picca pungens glauca, 5-yr., T. Prunus laurocerasus schiukaensis.	40
Dyencantha occidentalia lalandi 1	re 20
Taxus baccata aurea, 2-yr Taxus browni, 2-yr	25
Taxus cuspidata, 2-yr.	20
Taxus hatfieldi, 2-yr.	
Taxus, Vermeulen, 2-yr.	20
Thuja occidentalis globosa, 2-yr Thuja occidentalis nigra, 2-yr.	20
Taxus cuspidata. 2-yr. Taxus haffeldi, 2-yr. Taxus bicksi, 2-yr. Taxus. Vermeulen, 2-yr. Thuja occidentalis globosa. 2-yr. Thuja occidentalis nigra, 2-yr. Thuja occidentalis pyramidalis, 2-yr Tauga canadensis. 2-yr.	r20
Tsuga canadensis, 2-yr.  Minimum 25 of a kind, please, free. Write for our complete list and finished stock.	Packing
free. Write for our complete list	of liners
DEL-MAR-VA NURSERIES	3
Lincoln, Del.	
FALL OFFERING OF EVERGREEN SEEDLINGS	
Cash, please!	
Alaina Ein 2 am 4 to 6 in 1	er Per 00 1000 00
American Arborvitae,	
2-yr., 2 to 4 ins 3.	00 \$20.00
3-yr., 4 to 6 ins 4. 4-yr., 6 to 8 ins 5.	00 40.00
American Larch.	00 40.00
3-yr., 12 to 18 ins 5.	
Austrian Pine, 2-yr., 2 to 4 ins 3.	00 40.00 00 20.00
S-yr., 12 to 18 ins.  Austrian Pine, 2-yr., 2 to 4 ins.  Banks Pine, 2-yr., 2 to 4 ins.  Black Hills Spruce,	00 40.00 00 20.00 00 20.00
Austrian Pine, 2-yr., 2 to 4 ins. 3. Banks Pine, 2-yr., 2 to 4 ins. 3. Black Hills Spruce, 2-yr., 1 to 2 ins. 2.	00 40.00 00 20.00 00 20.00 50 15.00
william a to a title, annexament as a	00 40.00 00 20.00 00 20.00 50 15.00
M-Jake A CO M IIIO, BEARAGE CALLES	00 40.00 00 20.00 00 20.00 50 15.00 50 15.00 00 20.00 00 30.00
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M-Jake A CO M IIIO, BEARAGE CALLES	00 40.00 00 20.00 00 20.00 50 15.00 50 15.00 00 20.00 00 30.00 00
Colorado Blue Spruce, 2 yr. 1 to 2 ins. 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	00 40.00 00 20.00 00 20.00 50 15.00 50 20.00 30.00 00 20.00 00 20.00 00 50 25.00 50 35.00
Colorado Blus Spruce, 2-yr., 1 to 2 ins. 2. 2-yr., 1 to 6 ins. 3. 2-yr., 2 to 6 ins. 5. 3-yr., 4 to 6 ins. 10. 3-yr., 5 to 6 ins. 10. 3-yr., 2 to 6 ins. 10. 3-yr., 2 to 4 ins. 3. 2-yr., 2 to 4 ins. 3. 2-yr., 2 to 4 ins. 3. 2-yr., 4 to 2 ins. 4. Eagelmann Spruce, Blue, 2-yr., 1 to 2 ins. 2.	00 40.00 00 20.00 00 20.00 50 15.00 00 20.00 00 30.00 00 30.00 00 35.00 50 25.00 50 35.00
Colorado Blue Spruce, 2-yr., 1 to 2 ins. 2. 2-yr., 1 to 6 ins. 3. 2-yr., 2 to 6 ins. 5. Concolor Fir, 2-yr., 2 to 4 ins. 6. 3-yr., to 6 ins. 10. 3-yr., 2 to 4 ins. 2. 2-yr., 2 to 4 ins. 3. 2-yr., 2 to 4 ins. 3. 2-yr., 2 to 4 ins. 2. 2-yr., 2 to 2 ins. 4. Engelmann Spruce, Blue, 2-yr., 1 to 2 ins. 2.	00 40.00 00 20.00 00 20.00 50 15.00 50 15.00 00 20.00 00 30.00 00 50 25.00 50 35.00 50 35.00
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Colorado Blue Spruce, 2-yr., 1 to 2 ins	00 40.00 00 20.00 00 20.00 50 15.00 50 15.00 00 20.00 00 30.00 00 50 25.00 50 35.00 50 35.00
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Colorado Blue Spruce,  Colorado Blue Spruce,  2 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	00 40.00 00 20.00 20.00 50 15.00 50 15.00 50 20.00 50 20.00 50 35.00 50 25.00 50 35.00 50 25.00 50 30.00 00 40.00 00 30.00 00 30.00
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Colorado Blue Spruce, 2-yr., 2 to 2 ins. 2-yr., 4 to 6 ins. 3-yr., 4 to 6 ins. 3-yr., 4 to 6 ins. 4. Concolor Fir, 2-yr., 2 to 4 ins. 5. 2-yr., 4 to 6 ins. 10. Lougias Fir, Blue, 2-yr., 2 to 4 ins. 3-yr., 4 to 6 ins. 4. Engelmann Spruce, Blue, 2-yr., 1 to 2 ins. 2. European Larch, 2-yr., 6 to 8 ins. 4. 2-yr., 6 to 8 ins. 4. 3-yr., 1 to 2 ins. 4. Juniperus scopulorum, 2-yr., 2 to 4 ins. 4. Juniperus virginiana. 2-yr., 2 to 4 ins. 4. Mugho Pine (Dwarf), 2-yr., 2 to 4 ins. 4. Mugho Pine (Dwarf), 2-yr., 2 to 4 ins. 4. Mugho Pine (Dwarf), 2-yr., 2 to 4 ins. 4. Penderosa Pine, 2-yr., 2 to 4 ins. 2-yr., 2 to 4 ins. 3. 3-yr., 4 to 8 ins. 4. Penderosa Pine, 2-yr., 2 to 4 ins. 3. C. WILSON'S NURSERY Pembine. Wis.	00 40.00 00 20.00 20.00 50 15.00 50 15.00 50 20.00 50 20.00 50 35.00 50 25.00 50 35.00 50 25.00 50 30.00 00 40.00 00 30.00 00 30.00
Colorado Blue Spruce,  Colorado Blue Spruce,  2 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	00 40.00 00 20.00 20.00 50 15.00 50 15.00 50 20.00 50 20.00 50 35.00 50 25.00 50 35.00 50 25.00 50 30.00 00 40.00 00 30.00 00 30.00

2-YR. EVERGREEN SEEDLII Austrian Pine (Cert. Alps), Per 10 4 to 9 ins	NGS 0 Per 1000
from blue trees, 3 to 7	
Douglas Fir, 5 to 10 ins 8.75	37.50 41.50
ins	36.75
Scotch Pine (Cert. Austrian), 6 to 12 ins.  Scotch Pine (West Europe), 4 to 9 ins.	36.50
Scotch Pine (West Europe), 4 to 9 ins. 7.25 3-YR. EVERGREEN SEEDLIN Colorado Blue Spruce, seed from blue trees, 6 to 12	36.25 NGS
from blue trees, 6 to 12 ins	61.50 51.00
Mugho Pine (Cert. Tyrolean), 5 to 8 ins	51.50
5 to 8 ins	46.50
to 20 ins 10.75	46.75
Black Hills Spruce, 6 to 14	41.00
ins. 15.06 Colorado Blue Spruce, transplants, seed from blue trees, 2 and 2-yr., 6 to 9 ins. 20.00 We pay parcel post up to 4th zor Remittance with order.	75.00
2 and 2-yr., 6 to 9 ins 20.00 We pay parcel post up to 4th zor Remittance with order	ne terms.
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EVERGREEN LINERS AND CUT	TINGS
POT-GROWN AND TRANSPLA Each—Per 100	NTS
Arborvitae, American Dark Green	\$0.18
Euonymus alatus compactus,	.10
2-yr. pots	
1-yr. pots	S
Euonymus alatus compactus 69	.08
Euonymus erectus	.06
Juniper, Swedish	.09
Tuninarue glauce hatel	.12
Taxus cuspidata	.09
Taxus intermedia	king for
refund, plus full shipping charges p 250 plants at 1000 rate.	for full
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MIAMI NURSERY CO.	atu.
MIAMI NURSERY CO. Tipp City, O. EVERGREENS	an,
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per	Per 1000
MIAMI NURSERY CO. Tipp City, O. EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins\$8. Colorado Blue Spruce, seed from selected native 2 to 2.	Per 1000 00 \$40.00
MIAMI NURSERY CO. Tipp City, O. EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins	Per 1000 00 \$40.00 00 35.00 00 25.00
MIAMI NURSERY CO. Tipp City, O. EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins	Per 0 1000 00 \$40.00 00 35.00 00 25.00 00 40.00 00 30.00
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 8. Douglas Fir, 5 to 9 ins. 6. Scotch Pine, 7 to 11 ins. 7. Stocker State	Per 1000 1000 35.00 00 25.00 00 35.00 00 35.00 00 35.00 00 35.00
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 8. Douglas Fir, 5 to 9 ins. 6. Scotch Pine, 7 to 11 ins. 7. Stocker State	Per 1000 1000 35.00 00 25.00 00 35.00 00 35.00 00 35.00 00 35.00
MIAMI NURSERY CO. Tipp City, O. EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 8. Douglas Fir, 5 to 9 ins. 6. Scotch Pine, 7 to 11 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 8 to 14 ins. 7. 5 to 8 ins. 8 to 16 ins. 9. 8 to 12 ins. 8. Prices F.O.B. Denver, Remittan order.	Per 1000 35.00 25.00 00 40.00 35.00 25.00 00 25.
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7, 1 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 8. Douglas Fir, 5 to 9 ins. 6. Scotch Pine, 7 to 11 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 8. Douglas Fir, 8 to 14 ins. 7. 5 to 8 ins. 8. Prices F.O.B. Denver. Remittan order. SEEDS Colorado native evergreens. Ne Not yet collected, Order now. Som Write the collector.	Per 1000 \$40.00 00 \$40.00 00 \$40.00 00 \$45.00 00 \$25.00 00 \$45.00 00 \$25.00 00 \$40.00 00 \$25.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00 00 \$45.00
MIAMI NURSERY CO. Tipp City, O. EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7, 1 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 8. Douglas Fir, 5 to 9 ins. 6. Scotch Pine, 7 to 11 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 8. Prices F.O.B. Denver. Remittan order. SEEDS Colorado native evergreens. Ne Not yet collected, Order now. Som Write the collector. WESTERN EVERGREENS 3260 Field St. Wheat Rid	Per 1000 \$40.00 00 \$40.00 00 \$40.00 00 \$40.00 00 \$5.00 00 \$45.00 00 \$45.00 00 \$40.00 00 \$45.00 0
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 6. Scotch Pine, 7 to 11 ins. 7. Ponderosa Pine, 8 to 14 ins. 7. 5 to 8 ins. 5. TRANSPLANTS 2-2 Douglas Fir, 8 to 16 ins. 9. 8 to 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12	7 Per 1000 \$40.00 \$40.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.0
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 6. Scotch Pine, 7 to 11 ins. 7. Ponderosa Pine, 8 to 14 ins. 7. 5 to 8 ins. 5. TRANSPLANTS 2-2 Douglas Fir, 8 to 16 ins. 9. 8 to 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12 ins. 9 To 12 ins. 9. 9 To 12	7 Per 1000 \$40.00 \$40.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.00 \$25.00 \$0.0
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS  Per  Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 6. Scotch Pine, 7 to 11 ins. 6. Scotch Pine, 7 to 11 ins. 7. Ponderosa Pine, 8 to 14 ins. 7. 5 to 8 ins. 5. TRANSPLANTS 2-2 Douglas Fir, 8 to 16 ins. 9. 8 to 12 ins. 8. Prices F.O.B. Denver, Remittan order. Colorado native evergreens. Ne Not yet collected. Order now. Som WESTERN EVERGREENS 3266 Field St. Wheat Rid, JAPANESE RED MAPLE SEEDL (Acer Palmatum Atropurpureur 100% REIOS Well hardened, grown in open be Red Syr, XX, well-branched, 10 to 12 3-yr., XX, well-branched, 10 to 12 3-yr., XX, well-branched, 10 to 12 Server in the size available.	Per 1000 \$40.00 \$40.00 \$00 \$40.00 \$00 \$40.00 \$00 \$00 \$00 \$00 \$00 \$00 \$00 \$00 \$00
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7, 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 6. Scotch Pine, 7 to 11 ins. 7. Stock Palmarian Francisco Silver Juniper, 8 to 16 ins. 7. Stock Pine, 7 to 11 ins. 7. Stock Ponderosa Pine, 8 to 14 ins. 7. Stock Ponderosa Pine, 8 to 14 ins. 7. Stock Ponderosa Pine, 8 to 16 ins. 8. Prices F.O.B. Denver, Remittan order. SEEDS Colorado native evergreens. Ne Not yet collected, Order now, Some Weite the collector. WESTERN EVERGREENS 3260 Field St. Wheat Rid,  JAPANESE RED MAPLE SEEDL (Acer Palmatum Atropurpureur 100% RED and 100% BRANC RED 100% B	Per 10:00 0 \$40.00 0 \$5.00 0 \$5.00 0 \$5.00 0 \$5.00 0 \$5.00 0 \$5.00 0 \$6.00 0 \$5.00 0 \$6.00 0 \$5.00 0 \$6.00 0 \$
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7, 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 6. Scotch Pine, 7 to 11 ins. 7, 6. Scotch Pine, 7 to 11 ins. 7, 7, 2 to 8 ins. 7, 6. Scotch Pine, 7 to 11 ins. 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7,	Per 1000 840.00 00 35.00 00 45
MIAMI NURSERY CO. Tipp City, G.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 6. Scotch Pine, 7 to 11 ins. 7. 5 to 8 ins. 6. Scotch Pine, 7 to 11 ins. 7. 5 to 8 ins. 6. Scotch Pine, 8 to 16 ins. 7. 5 to 8 ins. 6. TRANSPLANTS 2-2 Douglas Fir, 8 to 16 ins. 9. 8 to 12 ins. 8. Prices F.O.B. Denver. Remittan order. SEEDS Colorado native evergreens. Ne Not yet collected, Order now. Som WESTERN EVERGREENS 2260 Field St. Wheat Rid, JAPANESE RED MAPLE SEEDL (Acer Palmatum Atropurpureur 100% RED 100% BRANC Well hardened, grown in open be Ready for 6-in, pots or open field pit 3-yr. XX, well-branched, 8 to 10 in 3-yr. XX, well-branched, 8 to 10 in 3-yr. XX, well-branched, 10 to 12 in Shipped beta grown or or of the Sieped Seed or order	Per 1000 840.00 00 35.00 00 45
MIAMI NURSERY CO. Tipp City, O.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins	Per 10:00 00 \$40.00 00 \$40.00 00 \$5.00 00 \$5.00 00 \$5.00 00 \$5.00 00 \$5.00 00 \$5.00 00 \$6.00 00 \$5.00 00 \$6.00
MIAMI NURSERY CO. Tipp City, G.  EVERGREENS 2-YR. SEEDLINGS Per Austrian Pine, 6 to 10 ins. \$8. Colorado Blue Spruce, seed from selected natives, 3 to 6 ins. 7. 2 to 5 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 5. Colorado Silver Juniper, 7 to 12 ins. 6. Scotch Pine, 7 to 11 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 7. 5 to 8 ins. 7. 6 to 8 ins. 7. 6 to 8 ins. 8. 6 to 14 ins. 7. 6 to 8 ins. 8. 6 to 14 ins. 7. 6 to 8 ins. 7. 6 to 8 ins. 8. 6 to 14 ins. 7. 6 to 8 ins. 8 to 16 ins. 8. 6 to 12 ins. 8 to 16 ins. 8. 6 to 12 ins. 8 to 16 ins. 8. 6 to 12 ins. 8 to 16 ins. 8. 6 to 12 ins. 8 to 16 ins. 9. 6 to 21 ins. 10	Per 1000 9 \$40.00 90 \$5.00 90 \$25.00 90 \$25.00 90 \$25.00 90 \$40.00 90 \$25.00 \$25.0
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SEEDLINGS AND TRANS	PLANT	rs
2-Yr. Seedings Pe Blue Douglas Fir. 3 to 6 ins\$	4.00 F	er 1000 \$ 25.00
2-Yr. Seedings Pe Blue Douglas Fir, 3 to 6 ins\$ Concolor Fir, 4 to 6 ins Concolor Fir, 2 to 4 ins Scotch Pine, 4 to 8 ins	6.00	30.00
Scotch Pine, 4 to 8 ins	4.00	20.00
Colorado Blue Spruce, 2 to 5 ins	4.00	25.00
American Arborvitae, 4 to 8 ins. Austrian Pine, 10 to 16 ins. Scotch Pine, 10 to 18 ins. Scotch Pine (Riga), 14 to 20 ins. Colorado Blue Spruce, 3 to 6 ins. Norway Spruce, 4 to 8 ins. 4-Yr. Transplants Norway Spruce, 8 to 14 ins.	5.00	30.0
Scotch Pine, 10 to 18 ins	6.00	35.00 35.00
Scotch Pine (Riga), 14 to 20 ins	8.00	40.00
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Norway Spruce, 4 to 8 ins	4.00	30.00
Norway Spruce, 8 to 14 ins Cash with order, Packin All prices F.O.B. Ang ARTHUR CASH NURS	12.00 g free.	100.00
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Taxus capitata (Upright Yew)		
3 to 3½ ft. 3½ to 4 ft. 4 to 4½ ft.	*****	7.50
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meulen, and others. Write for BULK'S NURSERIE Babylon, L. I., N. Y.	S	te list.
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		per 1000
Ilex crenata, field beds, 3-yr., T., 6 to 8 ins. 2-yr., S., 4 to 6 ins. 1-yr., S., 2 to 4 ins.	100	1000
2-yr., S., 4 to 6 ins		05
lex convexa, field beds, 3-yr., T., 6 to 9 ins. Juniperus pfitzeriana glauca, fiel		
Juniperus pfitzeriana glauca, fiel	id .3	
beds, 3-yr., T., 8 to 10 ins Taxus cuspidata, field beds,	11	
3-yr., T., 8 to 10 ins	31	
beds, 3-yr., T., 8 to 10 ins. Taxus cuspidata, field beds, 3-yr., T., 8 to 10 ins. 2-yr., T., 6 to 8 ins. Taxus hicksi, field beds, T., 2-y Cash with order. Free pa	r2! cking.	
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	100 Pe	
Blue Pfitzer Juniper 25	.00	200.00 175.00
Pfitzer Juniper 25	00.0	200.00 165.00
Armstrong Pulzer Juniper 23 Hule Pfitzer Juniper 25 Hetz Juniper 25 Pfitzer Juniper 25 Pyramidal Arborvitae 26 Woodward Globe Arborvitae 20 Write for complete list of	notter	165.00
Held-Eloku liners who period or	nd bur	lapped
evergreens. Terms: Cash with order, F	ree pa	cking.
Terms: Cash with order. F 300 plants of one variety at Not less than 50 of a variety, spring held for one fourth dep	Orde	rate.
VOGE NURSERY	osit.	
New Lebanon, O.		
PFITZER JUNIPER: Excellent quality.		
754	ach er 10 p	100
2 to 21/2 ft	2.80	\$2.50
YEWS-Excellent quali	ity.	5.50
Browns, 2 to 2½ ft. Hatfield, 1½ to 2 ft. CANADIAN HEMLOC 2½ to 3½ ft. CHINESE JUNIPERS (see	5.00	4.50
2½ to 3½ ft. CHINESE JUNIPERS (see	4.50	4.00
3 % to 4 ft	2.50	2.00
4½ to 5¼ ft	8.50	2.50
Rt. 83 ROSEBUD NURSERIE Chicago	28 Height	s, III.
EVERGREEN BARGAI	NS!	er 100
American Arborvitae, 3 to 4 ft	0	150 00
3 to 4 ft.		225.00
Norway Spruce, 3 ft.  3 to 4 ft.  Pfitzer juniper, 2½ to 3½ ft., X) Red Barberry, very bushy, 18 to 1 Customer digs self.	14 ins.	45.00
Blue Hetz Juniper, spreaders,		
Three times transplanted, qua	lity tr	ees.
HEISE'S NURSERY	ilanti.	
HARD MAPLE SEEDLINGS	OLLE	CTED
HARD MAPLE SEEDLINGS—C	5.00 pe	r 1000
12 to 18 ins	0.00 pe	r 1000
in leaf mold, so have good fi	brous	roots.
18 to 24 ins	Red Wing.	Wing. Minn.

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CANADA HEMLOCK	T. cu Junipe
4 to 8 ins., transplants, 2-2 \$15.00 \$120.00 8 to 12 ins., transplants, 2-2 \$2.000 \$180.00 12 to 15 ins., transplants, 2-2 \$35.00 6 to 9 ins., collected seedlings. 4.00 \$20.00 12 to 18 ins., collected seedlings. 8.00 \$45.00 12 to 18 ins., collected seedlings. 8.00 \$65.00 50 at the 100 rate, 500 at the 1000 rate.  Send for complete list.  ISAAC LANGLEY WILLIAMS.	\$75.00 TRA japoni
ISAAC LANGLEY WILLIAMS P. O. Box AN Exeter, N. H.  IRISH YEW	
Taxus hibernica fastigiata, your choice of green or golden. 4 to 8 ins., from beds, TT	2 to 8 PLAN
shipment. RICHARD P. RESSEL NURSERIES Mulino, Ore.	Ajuga
#EAVY POTTED TAXUS LINERS From 3½x4-in. rose pots; potted spring of 1953; carried under lath with overhead irri- gation. Per 100 6 to 8 ins. \$30.00 8 to 10 ins. \$35.00 2680 Taxus cuspidata 2680 Taxus media 1330 Taxus hicks!	field Englist Euony 2-yr. roote Pachys asson 2-yr.
THE LEICHHARDT HILLVIEW NURSERY Nashville Rd. Bowling Green, Ky.	VINC
LINING-OUT STOCK 2-YR. BEDS Per 100 Per 1000 Arborvitae, Green \$0.27 .25 Taxus cuspidata .27 .25 1-YR. BEDS Taxus cuspidata .17 .16 Taxus hicksi .17 .15 50 of one variety at 100 rate. 300 of a	20-cane clumps Pach per 100
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Box 341 Phone: 3351  McMinnville, Tenn.	
Canada Hemlock,         Each           10 ins, TT, heavy         \$ 0.25           12 to 18 ins, heavy         .50           3 ft., B&B, heavy         3.00           4 ft.         4.00           6 to 7 ft.         7.50	Stron HILLC Over
Carolina Hemlock, 6 to 7 ft	
EUONYMUS COLORATUS, 2-yr., field-grown, from pots, under irrigation and clipped, 12 to 15-in. spread, \$38.90 per 100; 12 to 15-in. spread, \$35.00 per 1000. EUONYMUS MINIMUS, staked upright. Each	Anchus 2-yr. Aquileg
12 to 12 ins. B&B. 1.85 12 to 15 ins. B&B. 1.85 15 to 18 ins. B&B. 2.25 WHITHAM NURSERIES Agency, Ia.	2-yr. Crims Armeria Artemis Bleedin 3 to 5
2½-pots, \$180.00 TAXUS 2½-pots, \$180.00 per 1000. T. hicksi, T. capitata, T. cuspidata, T. intermedia. Also same varieties, 2-yr. field-grown, 50c ca. BAIER LUSTGARTEN NURSERIES Middle Island, L. I., N. Y. Phone: Yaphank 4-3444	Carnation mixed Campan and S Dianthu Gaiet;
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COLORADO SPRUCE, B&B, 2 to 5 ft.; Mugho Pine, 12 to 15 ins., 15 to 18 ins.; Douglas Fir, 5 to 10 ft. Also lining-out stock, THE PEQUOT NURSERIES	Phlox s Blue white Ful
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Also peonies and day lilies.
Since 1915
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Grows in sun or shade. Pot plant.

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Strong plants ...\$15.00 \$130.00
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Giant strain, none better, Giant Swiss and
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Strong rooted cuttings \$10.00
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Strong 2¼-in, pots. \$12.50 per 100. Cash
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Healthy roots from 1-yr. transplant st	
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Pfitzer Juniper liners, field-grown,	Each
branched, trimmed, 12 to 15 ins	\$0.65
15 to 18 ins	.75
In plant bands:	
Andorra Juniper, 6 to 10 ins	
Blue Hetz Juniper, 6 to 8 ins	.14%
Euonymus patens, small leaf	.12 1/2
Hill's Dark Green American Arbor-	
vitae	.25
Pfitzer Juniper, 6 to 8 ins	.14 %
8 to 10 ins	.20
Pfitzer Juniper nana (Dwarf),	
5 to 6 ins	.20
Von Ehron Juniper, 8 to 10 ins	.14 1/2
Bare root:	
Andorra Juniper, 6 to 8 ins	.08
Blue Hetz Juniper, \$ to 8 ins	.08
Blue Spiraea (Caryopteris), 5 to 6 ins.	.05
Blueleaf Dwarf Arctic Willow, beds,	
2-yr., 10 to 15 ins	.10
Desmodium penduliflorum, 5 to 6 ins	
Euonymus coloratus, 6 to 10 ins	
Forsythia, Lynwood Gold, 5 to 6 ins	.10
Forsythia, Spring Glory, beds,	
1-yr., 6 to 8 ins	.05
2-yr., 12 to 15 ins	.10
Lythrum, Morden Pink, 5 to 6 ins	
All prices are for 300 or more total	order.
Less than 300, add 2c per plant	
McININCH GREENHOUSES	
St. Joseph, Mo.	

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	Per 1000
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The above are stocky, well-est	ablished
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2 to 4 ins	25.00
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21/2 to 6 ins., transplants		per	100
1 to 3 ins., seedlings	7.50	per	100
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Each—per	r 100	per 1000
Azalea kaempferi, 3-yr., TT \$	0.38	\$0.35
Dwarf Flowering Quince, 1-yr.	.10	.08
Euonymus alatus compactus.		
1-yr., T., 5 to 8 ins	.22	.18
Euonymus vegetus,		
1-yr., T., 3 to 6 ins	.15	.13
2-yr., TT., 6 to 12 ins	.28	.25
Ilex crenata convexa, 1-yr., T	.20	.18
Juniperus glauca hetzi, 2-yr., T.		.28
Cash with order, or 25% down	and	balance
C.O.D. No packing charge, 25	at 1	100 rate,
250 at 1000 rate.		

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Azalea cuttings, all varieties, \$50.00 per
1000. Japanese Black Pine, Norway Spruce,
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Carolina Hemlock, Mugho Pine, Ginkgo,
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Swiss Giants, Roggli strain or Florist Select, both mixed, \$8.00 per 1000, 5000 or more, \$7.00 per 1000.
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1000.

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All good, strong, healthy plants, field grown in Dow fumed soil. Packed right for safe delivery. Write for hardy plant list.

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Write for trade list.
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Our new crop of hardy 1-yr.-old phlox, and also our Creeping Phlox (Phlox stolonifera), look very promising. Ask for our new trade list.

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If you have not as yet received it, ask for
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PODOCARPUS MAKI seeds, new crop now geady. Order now. Shipment must be made as soon as seeds are picked. \$3.50 per 1 lb., 10 lbs. for \$30.00. PETER PEARSON Plymouth, Fla.

SEEDS—Continued	SURPLUS NURSERY STOCK, FALL, 1954 ARBORVITAE Es
LAWN SEED Prepared specially for the professional	1000 Globe A., 12 to 15 ins., B&B
Landscape gardeners' mixture \$22.00	100 lbs. 350 Pyramidal A., 3 to 4 ft., B&B 2 364.00 200 Pyramidal A., 4 to 5 ft., B&B 3
Contractors' mixture 38.00	73.00 HEMLOCKS, sheared plants.
Shady mixture 28.00	31.00 1000 24 to 30 ins. 2 54.00 1500 30 to 36 ins, 2 freight 1500 36 to 42 ins. 3
Shady mixture 28.00 F.O.B. New York. 200 lbs. shipped ippaid. Write for wholesale price list shows contents of above and other mulas, as well as prices for indi	freight 1500 36 to 42 ins
shows contents of above and other	r for- 500 4 to 5 ft
	2000 Pfitzer J., 18 to 24 ins 2
HERBST BROS. SEEDSMEN, INC. 878 Broadway New York 12.	N V 100 DStrop V 20 to 20 inc
YUNNAN	500 Golden Spreader J., 18 to 24 lns 1
NEMATODE-RESISTANT PEACH SE	SEDS 500 Column J., 24 to 30 ins 1
solated orchards. \$4.00 per 100; \$30.	00 per 1750 Column J., 4 to 5 ft
Grown from selected Freestone st isolated orchards. \$4.00 per 100; \$3c. 1000; 5000 lots, 2½c ea.; 10,000 some more, 2c ea. Prices F.O.B. Princess Md. or Marshallwills. C.	Anne, 5 to 6 ft
Yunnan seeds give added vigor as v	well as 54 Spiny J., 4 ft
esistance to most root nematodes. BOUNTIFUL RIDGE NURSERIES	385 Spiny J., 15 to 18 ins
Princess Anne, Md.	BROAD-LEAVED STOCK
MULTIFLORA ROSE SEEDS picked	Anne. 5 to 6 ft. 2  5 to 6 ft. 3  5 to 6 ft. 3  8 vell as 54 Spiny J., 4 ft. 3  200 Spiny J., 18 to 24 ins. 1  S 385 Spiny J., 15 to 18 ins. 1  BROAD-LEAVED STOCK  1 from 200 Dahoon Holly, 18 to 24 ins. 2  1 to fall 100 Dahoon Holly, 24 to 30 ins. 2  1250 Euonymus, patens and carrierel.
horny, upright plants. Order now followery from 1954 crop.	1250 Euonymus, patens and carrierei,
1 to 5 lbs	per lb. 15 to 18 ins
6 to 25 lbs 3.65 26 lbs. or more 3.40 F.O.B.	per lb. 1250 Euonymus, patens and carrierei, per lb. 18 to 24 ins
FARMLAND IMPROVEMENT CO	AZALEAS
Box 124 Yorkvill TREE SEEDS, domestic and foreign	Beauty, 12-in, heads shipped from 6-in, po t. Get Fall delivery, \$1.25 ea., spring, 1955 deliver
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ROOTED CUTTINGS TRANSPLANT	ED LIGUSTRUM AMUR RIVER PRIVET.
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to 8 ins	4 N 1 2 yr 2 to 5 ft 11 00 100 f
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Pe	r 100										to % in.		1 in.
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No.	of	Cas	es									Size of	Cases
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50	to	99.			*		×			*		5.25	10.00
25	to	49.				*	×	*				5.75	11.00
10	to	24				*		*	×		×	6.25	12.00
1	to	9					,		×	×	×	6.75	13.00

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No.	No. of Cases												Size of	Cases		
															50-ft.	100-ft.
100	or	mo	36	0		×									\$7.50	\$14.50
50	to	99			*	×	×	,		×					8.00	15.50
25	to	49			×		*				×		×	*,	8.50	16.50
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#### ALABAMA SHORT COURSE

[Continued from page 15]

ally has meant the most expensive structure in the cost of maintenance over a period of time, resulting in more cost than if a more expensive greenhouse were first installed.

Man's control of environment in a greenhouse is not perfect by any means. Low light intensities cannot be supplemented economically to bring them up to the optimum. It is still not possible adequately to reduce high temperatures. Control of humidity is usually good but not perfect. For the most part, however, aeration, water and fertilization can be controlled adequately.

While greenhouse control is not perfect, it is far better than the outdoors, the speaker observed.

As the school continued on Friday morning, Dr. James Lyle spoke on the principles of plant disease control. He brought out that losses from disease may be classified in several ways. There may be a direct loss from lowered quality or quantity of the affected crop. There may be an indirect loss resulting from the cost of control, involving such things as disease surveys to determine the prevalence of a certain disease, the maintenance of an inspection and quarantine service to prevent the importation or spread of diseases, the cost of sprays and their application, eradication work and other expenses incidental to the control and prevention of diseases.

#### **Disease Control Measures**

Dr. Lyle discussed control measures for plant diseases, stating that they must not be too complicated, difficult, dangerous or unpleasant for use by the average grower. Further, control practices must be worked out as solutions to individual problems in each location, and the best control methods will differ from one nursery or area to another, according to weather conditions, peculiarities of the site, type and condition of the crop, methods of culture and value of the crop.

He made these additional points: A control program should be worked out considering all kinds of losses; where control practices are opposed to other desirable practices, a compromise program should be worked out which will give the greatest return, all things considered, and control should have a definite purpose. Spraying, dusting or any other control practice without a concrete purpose is wasteful and may even be harmful to the crop.

Dr. Ray Self, plant pathologist,

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L. ATKIN'S SONS

P. O. Box 167 Rochester, N. Y. ornamental horticulture field station, Spring Hill, Ala., brought the morning to a close by offering additional material on plant disease control.

The best means of control, Dr. Self observed, is to start with disease-free stock and keep it clean. The production of disease-free stock involves the use of clean seeds or cuttings, planting in clean soil or propagating medium in a clean house, general sanitation and often the application of protective sprays to prevent infections.

Discussing control of specific types of diseases, the speaker mentioned root rot, control of which consists of sanitation, avoidance of overwatering and the use of chemical soil drenches once the disease appears. The chief means of spread of root rot is probably through nursery stock. The causative organism is soil borne and can best be controlled by sterilizing the soil with MC-2, formaldehyde or steam and avoiding recontamination.

Leafspotting diseases on ornamentals are numerous and are easily spread by splashing water. Fermate, Manzate, Zineb, Copper-A and Orthocide 406 applied as sprays, were nontoxic to American magnolia, Japanese magnolia, loquat, Burford holly, dwarf rose, English laurel, crape myrtle and Pink Perfection camellia.

One or more species of ectoparasitic nematodes have been identified on 14 nursery crops, mostly liners, in Alabama, the speaker continued. A total of six different species, in addition to the root knot nematode, have been identified. Azaleas, camellias, gardenias, hollies, boxwood and privet are favorite hosts. External-feeding nematodes produce stubby roots and chlorotic leaves on azalea plants. Methyl bromide fumigation is still the best available means of eradication for liner beds.

#### Landscaping Small Home Property

Homer Fisher gave a most interesting and informative talk on "Planning, Planting, and Maintenance of the Small Home Property." He said that carefully made plans should be available before starting the landscape development of any home grounds. This is desirable regardless of the size of the property. For new properties, planning of the grounds should be done before the house is built and should include the selection or design of a house plan appropriate for the specific area concerned.

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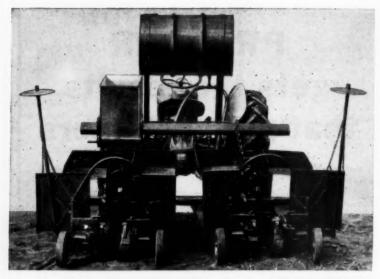
A natural organically mineralized plant food and soil conditioner. Excellent for general use by landscape men and nurserymen.

Packaged—25, 50 and 80-lb. bags. Reasonably priced.
Also packaged in customers' bags.

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GEORGETOWN

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## Designed by NURSERYMEN for the NURSERYMEN

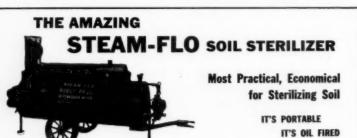
For ALL Nursery Stock Up to 4 Inch Potted Plants

There is planting security and independence when you own a new Snyder Combination one or two row Transplanter and Seeder. Security, because you have the newest and best combination all in one machine. Independence, because you are ready to get into your planting field when you want to. Your harvest pay day depends on your successful planting. Our prices start at \$185.00 for the One Row Transplanter. For further information, write

#### SNYDER TANK CORPORATION

**Farm Implement Division** 

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# Use STEAM-FLO SOIL STERILIZER for: Greenhouse benches, inside beds, outside beds, hotbeds, etc.

It's no secret . . . Steam-Flo Soil Sterilizer has been Tested and proven by our leading universities and nurserymen throughout the United States during 1953. Yes, Steam-Flo is your answer to low cost soil sterilizing. Seves you many dollars in labor and material cost, and it's big enough to do your job without handling the soil.

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#### ROUGH BROS.

Manufacturers and Builders of Quality Greenhouses Write for Catalog.

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#### PERFECTION MARKERS ARE BETTER



for Park Trees, Display Gardens, Field use or Greenhouse Pots or Benches, Proven by thousands of users and every one a booster! You'll like them, too, They will stand ochanged any number of the changed any number of the ricus markings. Send for eataand prices of the complete ECTION LINE. W Sunedy Co., 8. 13, Stard, Las



pare plans for a property a careful survey of the area and its surroundings should be made. Such things as existing trees and natural outcroppings of rock may determine the type of development to be made in certain sections. In the same sense that the architect consults his client in regard to details of a house, so should the landscape planner obtain information about the grounds.

In making plans for home grounds, the usual procedure is first to divide the grounds into three major areas. These are generally classed as the front or semipublic area, the private area and the service area. The front or semipublic area is, as the term implies, the area in front of the house. It is usually open to public view and serves as a setting or foreground for the house. In most cases the best treatment for this area is to develop it as an open lawn with only such large trees as are needed to provide a foreground or frame for the house and to provide shade.

Such areas as the outdoor living room, floor garden and open lawns should be directly related to or easily accessible from the living room of the house.

Garden areas may be formal or informal as desired. Formal gardens should be developed only on level areas. Sloping sites should be graded to two or more level areas. Terraces or retaining walls may be used at the junction of different levels. Since formal gardens are based on geometric patterns, they are usually easier to plan than those of informal design. Rectangles, ovals, circles and combinations of these forms may be used to make the pattern of the garden. Formal treatments, in general, will often be most satisfactory for small properties.

#### Service Area Should Be Included

For most home grounds a definite service area should be included. In this section provisions should be made for such things as fuel storage, a drying yard and a compost pile. Also, cut-flower and vegetable gardens, animal pens and similar things are often desired in the service area. This area should be easily accessible from the kitchen and driveway.

The normal planting season for lower south is the late fall, winter and early spring. Plants set early become better established and acquire some root growth during the winter and are ready to start growth immediately in the spring.

The use of wilt-reducing materials and the growing of plants in cans has

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# ALUMALATH

# IF YOU NEED SHADE YOU NEED ALUMALATH GET THE FACTS

FILL IN THE COUPON AND SEND IT NOW

HARRY H. REYNOLDS SANTA ANA, CALIF.

Name						•											
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Nursery		Shade For							
Commercial	Patio 🗆	SizeXXX	Address						
Cold Frames		SizeXXX	City State						

CONTROLS THE SUN

made it possible to extend the planting program through the entire year.

Maintenance problems for home grounds include fertilizing, pruning, insect and disease control and general care of lawn areas.

Pruning is essential in the maintenance program if plants are to serve most effectively the purposes for which they are planted.

Fertilizing of ornamental plants naturally must be varied according to the types of plants and the conditions under which they are growing. Under average conditions an application of a complete fertilizer, such as 6-8-4 or 4-10-7, applied at the rate of two to four pounds to 100 square feet will be satisfactory. An application at this rate applied in the spring and just before growth starts and repeated in June will usually be sufficient.

#### Determining Fertilizer for Trees

The amount of fertilizer for trees is often based on the diameter of the tree and the nitrogen content of the fertilizer used. One should use one-fourth pound of available nitrogen per inch of diameter up to six inches, and one-half pound per inch of diameter for trees six inches or more in diameter.

Application of fertilizer for trees



NOTE: Blanks are now available, easy to staple at the nursery; good fill-in chore for your regular workmen.

PAT. NO. 2073695

5			customer
	can trans		nvenience pot.

6 PROMPT TRUCK OR RAIL SHIPMENT

at established low prices. Try'em yourself!

CLOVERSET FARM, Dept. A 105th & Wornall Rd. Kansas City 14, Mo.

Please send complete informa-tion about sizes, prices, etc., of Cloverset pots.

Also sample set of 5 pots @ 50c.

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Exclusive Eastern Distributor, MOORESTOWN GARDENS, INC., 55 E. Oak, Morrestown, Burlington Co., N. J.



105th & WORNALL RD.

KANSAS CITY 14, MO.

W-W Compost Grinders and Soil Shredders have



Here's the most versatile grinding equipment available. Powered by two Briggs & Stratton engines, the grinder and elevator separate for individual use. It shreds heavy sod or grinds roughest matter into the finest compost material or mulch and loads it at the same time.

Also mixes and screens. Wheels on each section for easy portability. \$684.00 complete with engines, F. O. B. Wichita.



This popular portable model is gas or electric powered, with belt guard. \$178.00 complete with 2-h. p. Briggs & Stratton engine and belt guard. \$124.50 less mofor and belt guard,

els make top dressing and potting soil without additional attachments Write for Literature on Complete Line

W-W GRINDER CORP.

# UMINUM TAGS

(All-weather)

31/2" x 3/4"

- Patented cardboard backing permits easy embossing with ordinary lead pencil.
- · Heavy eyelet. Copper-wired.
- · Attractive silver Aluminum, backed with yellow cardboard.
- Inexpensively priced:

1000 for . . . \$14.00 250 for....\$5.00 500 for .... 9.00 100 for .... 2.50

Write for samples.

#### BERRYHILL NURSERY CO.

P. O. Box 696

Springfield, Ohio

SOIL ANALYSIS FOR GOOD GROWING WITHOUT GUESSWORK



Your only reliable guide to line, humus, plant feeds and trace elements. write teday for full information and soil sampling directions.

EDWIN HARRINGTON . Agricultural Chemist CARVERSVILLE, BUCKS COUNTY, PA.

can best be done by mixing the fertilizer with soil and applying in holes 12 to 18 inches deep distributed at 15-inch intervals from about two and one-half feet from the trunk to the outer spread of the branches or slightly beyond. It is better to bore or dig holes than to punch them.

The rest of the afternoon was spent in visiting small home properties at Auburn, with Mr. Fisher; Dr. Furuta; Henry Orr, of Alabama Polytechnic Institute, and James Franklin, horticulturist, Brooklyn Botanic Garden, Brooklyn, N. Y., conducting the tour and commenting on the landscape design around the different homes.

#### George Sawada Introduces Guests

The banquet room of the Auburn Union building was the scene of the banquet held for those attending the course. After the banquet the guests of honor were introduced by George Sawada, president of the Alabama Nurserymen's Association.

Everyone flocked to Duncan Hall for the Saturday morning session of the short course. Henry Orr, associate professor of horticulture, gave an enlightening talk on nursery soils and fertilization. Mr. Orr said that by no stretch of the imagination can the nurseryman's operation be separated far from that of farming operations. The nurseryman faces the need for good systems of soil management with proper fertilization. The scheduling of crop rotations has been a practice generally accepted in other areas. Nurserymen face a dual problem of keeping their soil good and at the same time maintaining a high production level. The way for devastating soil losses in the nursery is opened by clean and continued cultivation, long growing seasons and removal of soil with balled stock.

It has been stated by experts in soils that more good soil can be lost or drained of fertility in nurseries than in any other crop-producing business. To be successful, a grower must have much know-how in soil management. In developing a soil management program for his nursery it would be highly beneficial to the nurseryman to call upon his local soil conservation service or extension service for their aid in surveys and advice on land use, the speaker declared.

Many nurserymen could easily use a pond for irrigation purposes, he added. In checking with the conservation or extension service, areas are often found that are ideally suited for pond use and for little



This new way of landscaping is taking the country by storm No langer is it necessary to rely on hauled-in top-soil of uncertain HYPER-HUMUS **Cultured Peat** 



The Organic Soil Vitalizer

TIMELY HINT - Mix one part HYPER-HUMUS with two parts loam when planting Bulbs, Perennials, Shrubs and Trees.

Write for Top-Soil Bulletin

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NEWTON

#### CHLOROSIS CURED

With IRON SEQUESTRENE

Iron sequestrene is the first and the best of the chelated irons. It is standardized at 12 per cent metallic iron and is the best treatment for all forms of iron chlorosis.

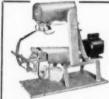
NEW LOW PRICE

\$20.00 for a 10-lb. drum, postpaid for cash with order.

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**FELINS ELECTRIC** ROTARY

OR RACK

Sturdy construction, smooth action for tying all varieties of nursery stock cut flowers and bunch vegetables at a great saving of time, money, twine

#### ELINS TYING MACHINE CO. 3351 N. 35th St.

#### PLANT IT any time USE CRYSTAL No-Dri LIQUID WAX

Used for over 20 years to reduce wilting and setback of transplanted broad-leaved and confi-erous evergreens, deciduous trees, flowering shrubs, etc. Safe on plant tissue; paint or spray it. Extend transplanting and landscaping through hot weather.

55-gal. drum....\$63,25 30-gal. drum....\$37.50 5-gal. drum.....\$7.25 All prices F.O.B. Philadelphia, Pa.

CRYSTAL SOAP & CHEM. CO., Inc. 6300 State Road, Philadelphia 35, Pa., Dept. AN.

#### BURLAP SHEETS AND SQUARES

cut and sewn to your specifications. Quotations and samples on request.

STERLING BAG & BURLAP CO. BUFFALO 1, N. Y. 41 Carolina St.

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# **Spring Cleaning Starts Now** with CRAG Herbicide-1

Make your next spring-weeding easier by preventing chickweed and other winter annuals with CRAG Herbicide-1. Start now with a clean field and an application of Crag Herbicide-1. Keep your field clean with further applications as needed even as late as October. This will prevent the weeds that germinate in the fall and keep on growing through the winter.

Don't let your weed control program stop in the summer, keep it up through late fall-you'll find it pays off by making your spring clean-up easier.

## CRAG Herbicide-1

is a product of

#### CARBIDE AND CARBON CHEMICALS COMPANY

A Division of Union Carbide and Carbon Corporation 30 East 42nd Street Tal New York 17, N. Y.

"Crag" is a registered trade-mark of Union Carbide and Carbon Corporation.

else. There may be a small source of water present at this area, but by contour stripping and terracing the runoff water may be conserved and directed to this pond area for later

use in times of drought.

The key to profit in any of our nursery crop ventures is successful crop growth, Mr. Orr continued. Many nursery crop failures are the result of an attempt to grow a certain crop on a soil which did not provide the conditions necessary for profitable crop yield.

If nurserymen are to maintain or increase the fertility of their soils and do it economically, they must know what these soils require before

treatments can be applied.

The speaker recommended systematic soil fertility tests, which provide definite information about soil conditions and serve as logical guides to the formulation of soil improvement plans and practices.

Dr. L. C. Chadwick, department of horticulture, Ohio State University, expressed the belief that a well-developed crop rotation plan for nurserymen includes the use of sod, winter cover, green manure and companion crops alternated with or accompanying nursery stock. The length of time that it takes to produce a salable crop of nursery stock,

and the method followed in digging the crop are factors influencing the rotation adopted.

For nursery stock that matures in two years, green manure crops can be grown for a year between two nursery stock crops and then the land would be put down in sod for two years before the rotation is repeated.

Fertilization to the extent of forcing exceptionally rapid growth frequently does not result in the highest quality, Dr. Chadwick declared. A normal, uniform rate of growth is the most desirable.

The quality of the nurseryman's product is a factor that needs to be more closely scrutinized now than at any other time in history, he concluded.

#### Propagation Discussion

Tom Eden, instructor in horticulture, concluded the short course with a "Review of Fundamentals of Plant Propagation by Soft and Hardwood Cuttings." Mr. Eden said that no matter what method is to be used to propagate a given plant, the first point to be considered is the individual requirement of that plant. Few general rules can be given, because each species has its own characteristics. Starting with a



# REX REED MA

SAVE TIME, MONEY AND WORK

Rex Reed Mats are ideal covers for lath houses . . . cold frames or hotbeds. They are equally useful as background screens in modern landscaping, Although sturdily made of selected lake reeds securely woven together, Rex Mats are lightweight and are easily rolled in a compact bundle. This means a real saving in labor and storage space. Write today for literature and prices.

Imported Nurserymen's Supplies Rex Peat Moss—Peat Moss Seedlings Pots-Wilt-Pruf-Other Specialties.

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Breaks up water into exceedingly

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- Operates on regular water pressure —25 lbs. or more.
- Uses only I gallon water per hour.

fine fog.

• 1/8-in., 1/4-in. or 3/8-in. male pipe thread.

Write for detailed information including prices, specifications and installation diagrams.

DEALER INQUIRIES INVITED

## W. A. WESTGATE

P. O. Box 445, Davis, Calif.

# WOOD LABELS

For Nurserymen

DAYTON FRUIT TREE LABEL CO.

Ray and Kiser Sts. DAYTON, O.

# POCKET MICROSCOPE 3 BILLION DOLLAR ioss eash year is jant and fruit production eaused by inseet and plant diseases. HOW MUCH DO YOU LOSE? YOU and YOUR HELPER'S should have a pocket microscope ready for instant use in the study of scales, red spiders, mites, inseets and found, in five microscope ready for instant use in the study of scales, red spiders, mites, inseets and found, in the product of the second of the seco

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Horticultural Consultant
1242 WEBB RD. CLEVELAND 7. 0.

# LEONARD

PIQUA, OHIO
Knives - Shears - Pruning Tools
Nursery Spades-Grafting Supplies
WRITE FOR CATALOG

discussion of propagation by cuttings, Mr. Eden assigned the following reasons for the popularity of this method over the practice of grafting or the use of seeds:

 It is an easy and rapid method of propagation as compared to grafting.

2. It produces plants like the parent plant.

3. Propagation by seeds may be impossible because of lack of seed production by the plant or for some other reason.

The speaker went on to say that many woody plants are propagated by softwood cuttings; that is, the cuttings are taken before the stem is mature. What characterizes them is not the type of parent plant but the immaturity of the part used. One necessary condition of softwood cutting propagation is that the plant from which they are taken be in vigorous health. Intense sunlight is disasterous to newly planted softwood cuttings. On this account it is necessary to shade the plants until they form roots.

#### **Hardwood Cuttings**

Hardwood cuttings was the next topic Mr. Eden brought to the attention of the group. He said that hardwood cuttings are made from the ripe wood of the past season's growth or older wood, which in the case of deciduous plants will make no more growth during the season at hand. Mature or hardwood cuttings may be made at any time in fall, winter or early spring. With plants growing in the open the great majority are made for spring planting. No general rule governs the length of hardwood cuttings. For convenience of handling, cuttings are usually made from four to eight inches long. Whatever the kind of stem cutting, it should have at least two buds or nodes, one for the re-gion of rooting and one for the top shoot or new plant aboveground.

Mr. Eden went on to tell about propagating equipment, mist propagation, sanitation, sterilization and transplanting. He brought his talk to a close with a discussion of antitranspirants. He said that these retard water loss in plants and the chief advantages are as follows:

 They reduce moisture loss when transplanting, lining out and propagating.

2. They help dormant stock retain moisture and vitality in storage and in later transplanting.

They will prevent winter burn on evergreens growing in exposed positions.

# ROTPROOF

Colored Burlap

The Answers to Your Treated Burlap Problems.

- Outlasts untreated burlap 6 to 8 times.
- · Not oily.
- Clean, odorless.
- Noninjurious to plants.
- Will not harm or irritate handlers.

As an added feature, these squares may be had COL-ORED in GREEN or RED.

Write now for samples and low prices.

#### AMERICAN - DUTCH TRADING CO., INC.

P. O. Box 177, CRANSTON 10, R. I.



TWO PROFITABLE BOOKS FOR NURSERYMEN

> HORSE-SENSE HORTICULTURE

YOU CAN LANDSCAPE YOUR OWN HOME - Retails for \$1.00

Special Introductory offer — 1 of each \$1.50 postpaid. Descriptive Circulars Free.

THE MINNETONKA PUBLISHING CO.,



# GREENHOUSE AND NURSERY SUPPLIES

AMERICAN FLORIST SUPPLY CO.

1335 W. Randolph St. CNICAGO 7, ILL.

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#### WASHINGTON MEETING

[Continued from page 10]

knows is that he wants something green, something with flowers, and he suspects that he needs something to protect his \$1.25 investment. He may be a headache, but he represents opportunity because he is typical of 95 per cent of the potential customers. Nurserymen may resent invasion by grocery and other chain stores into the field of selling of nursery stock, but these firms know how to deal with persons who do not know one plant from another.

Cecil Solley stated that customers expect good public relations from nurserymen. They expect nurserymen to tell what good plants they have and how well the plants grow. Also, customers expect the nurserymen to do something about the other

fellow's bad advertising.

Mr. Solley chided the nurserymen present for not giving advance information to newspapers about plants which they wish to promote. He stated that the three panelists, by virtue of their occupations, reach many thousands of persons by radio and television and through the newspapers. Yet, he stated, rarely does a nurseryman supply information to them for use in their columns or talks.

#### Panel on Advertising

The second panel discussion of the afternoon dealt with advertising and was led by Bryan Taylor, Taylor Nurseries, Seattle. His remarks were reinforced and augmented by radio, television and newspaper advertising experts. All of the panelists emphasized the tremendous market potential the future holds for dealers in plants and garden materials.

Among the most pertinent points of the discussion was that nurserymen, in their advertising, should "sell the sizzle—not just the steak." Just as the delectable, mouth-watering aroma of the broiling steak is the thing that causes response to a steak advertisement, so it is the loveliness and colorfulness of the flower or bush which sell the plant and should be described in advertisements.

One of the speakers emphasized the need to plan ahead on advertising, not merely attempt to beat the deadline. It was pointed out that a department store plans its advertising for an entire year, then breaks it down into quarterly periods and finally into shorter periods related to seasonal merchandise. As a result, the stores are always driving toward a goal. They benefit from a planned program, and nurserymen



YORK RAKE MODEL RE

# DOES ALL THESE JOBS, SAVES USING EXTRA EQUIPMENT!

# Use it for

- 1 REMOVING STONES
- 2 REMOVING BRUSH. ROOTS AND DEBRIS
- 3 SPREADING TOP SOIL
- 4 GRADING, LEVELING AND MULCHING
- 5 BULLDOZING
- 6 DITCH MAINTENANCE AND TERRACING

 YORK RAKE (Model RE) at work on lawn grading project.
 Large stones have been removed, and soil is being readled for seeding. With only the YORK RAKE (Model RE) and a tractor, landscape gardeners and contractors now can perform most lawn building operations, up to the actual seeding. The Rake takes the place of several other pieces of mechanical equipment, as well as eliminating most hand labor . . . and pays for itself in a short time.

The YORK RAKE is built for use with all tractors equipped with 3-point hitch, such as Ford, Ferguson and numerous others. It's a highly versatile tool . . . removes stones, roots, brush, debris . . . spreads top soil . . . does a finished grading job . . . leaves an ideal bed for seeding. It also can be used as a buildozer, and for ditch maintenance and terracing operations.

Rugged construction assures trouble-free operation.

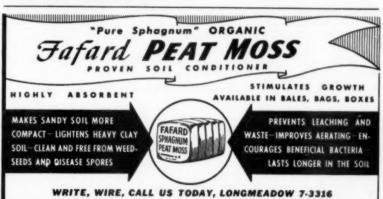
Long wearing teeth are made of heat-treated alley spring steel, rigidly attached to high carbon spring steel bars. Working width is adjustable from 6 ft. to 8 ft.

Optional Attachments (Caster Wheels, Grader Blade and High Lift) available at extra cost.

For complete details and prices write Dept. AN-154







CONRAD FAFARD INC., P. O. BOX 774(A) SPRINGFIELD, MASS.



Write for folder giving details and prices.

## THE GARDEN SHOP, Inc.

Overland Park, Kansas

Phone HEdrick 3288 (Kansas City, Mo., exchange)



#### EARN HIGHER BECOME A LANDSCAPE GRADUATE

Men and Women! Study at home in your spare time. In 8 to 12 months YOU can be a successful landscaper! Healthful, pleasant, satisfying work in an uncrowded profession.

American Landscape School offers specialized training in Landscape Design, Horticulture, Construction and Superintendence, Drafting, Salesmanship and Office Practice, Mapping and Field Work, Garden Design, 45 generously illustrated lessons. Prepared by Francis A. Robinson, late president of American Landscape School. Active professionally for 42 years, Mr. Robinson achieved prominence as a landscape architect with his plans for the World's Fair in Philadelphia, various colleges and universities, many state fairs, expositions, parks, and elemeterles coast to coast. Free lifetime consultation service. Salvyear, Successful graduates throughout the world. Mall coupon today for FREE illustrated catalog.

J. L. Moreau, Jr., of N. J., says: "The time and money I spent on the course has paid for itself many times over. It advanced the organization of my own business by several years."

State. ease tiner

should consider similar advance advertising planning.

Bryan Taylor called attention to the 50-foot-long display of newspaper clippings on a wall of the meeting room. The clippings were from almost every daily and weekly newspaper in the state and were a result of the campaign by the advertising staff of Balls & Burlaps. the Washington State Nurserymen's Association magazine. Press releases on plant material and growing advice were sent through the state each week, and these releases have proved excellent public relations, much to the credit of the Washington group.

The afternoon session closed with an invitation to the members to visit the commercial displays.

#### **Banquet Held**

A banquet was held in the University room in the evening. Tables were gay with favors made by Helen Clohesy, Richmond Nurseries, Richmond Beach. The favors consisted of miniature trees, shrubs and flowering plants in simulated burlap wrap mounted on a cedar slab. An appreciated touch was a "sold" tag attached to each plant.

Highlight of the convention was the presentation of a gold wrist watch to Vic Mix, convention chairman, who was chosen "Man of the Year" for his efforts at making the convention a success and his untiring leadership. John Strander and Stanley Walters were also given wrist watches as first and second-year recipients of the "Man of the Year" award.

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Mr. Strander introduced the members of the Balls & Burlaps staff and traced the growth of the publication from the time when its circulation was 550 to its present circulation of 2,069, and from its three mimeographed sheets to its 32 lithographed pages. Esther Gilbert, production manager, was awarded a watch for her excellent work.

#### Mayor Starts Second Day's Session

Seattle's Mayor Allan Pomeroy extended the city's greetings to the morning assemblage, as nurserymen convened for the second day of their convention. The mayor's talk called attention to the continuing growth of the city.

Officers' reports were read and the election was held, after which Paul A. Mayer, chairman of the legislative committee, read a report signed by Mr. Mayer and his fellow committee members, Stanley Walters, Don Henson, John Snyder and Harry Post.

The committee made the following recommendations:

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"Good Business" is the art of making a profit from your operation. Profits are made by either increasing income or cutting costs. A Royer Compost Mixer will be a big help both ways. Flowers and plants fed with rich, properly prepared Royerated compost are strong and healthy, . . readily saleable at top prices. But it is the cost cutting feature that is most important. Because this efficient machine will produce compost in about 1/8th the time needed by manual methods you reduce your labor costs by 89%. Long after the dollar

savings have paid off the original investment they will continue to help you operate at  $\alpha$ 

profit. Investigate this "Good Business" deal . . . write for Bulletin 46 giving complete details.

It's Just
"Good Business"
to
Buy A ROYER



ROYER foundry & machine co.

182 PRINGLE ST., KINGSTON, PA.



1. That the present Washington state grade laws pertaining to hardwood nursery stock be enforced by the Washington state nursery inspection service.

2. That all horticultural advertising in any advertising media state grade and size of nursery stock offered for sale or else definitely identify it as ungraded; that all advertising of nursery stock conform with the standards adopted by the American Association of Nurserymen and the better business bureau and conform with standards of advertising adopted by the federal trade commission, and that these regulations be applied equally to resident and to out-of-state advertisers in the state.

That all sales of hardwood plants be recorded and the purchaser of such nursery stock be given a copy of the sales slip.

4. That all collected plants offered for sale be advertised and plainly marked "collected material."

5. That all plant material arriving in the state of Washington in a dead or dying condition be rejected by the state nursery inspection service.

6. That the license fee for dealers

be raised to \$25.

7. That the license fee for growers, where no nursery stock is handled for resale, be \$10.

8. That the license fee for agents be \$10.

 That licenses issued to dealers be limited to those who have a definite place of business. No mobile licenses should be granted.

The committee report included quoted reactions of other nurserymen's associations and flower and bulb growers' groups, all of which endorsed the objectives of the W. S. N. A. legislative committee approximately 98 per cent.

Mr. Mayer asked for an appropriation of not less than \$250 with which to hire legal advisers to write the recommendations in a form suitable for presentation to the state legislature. This was unanimously granted, and Mr. Mayer and his committee were instructed to proceed with the work on these important matters.

#### A. A. N. Chapter Meets

Chapter 28 of the American Association of Nurserymen met on the afternoon of August 17, with a closed business session, after which the meeting was thrown open, with Stanley Walters, president, presiding.

Harold Hopkins was unanimously elected as vice-president to complete the unfilled term of this office.



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#### SHIPPING PERENNIALS

[Continued from page 17]

duces the possibility of losses which might be sustained as a result of heating in the center of the box. Once the contents have been cooled the temperature of the storage can be raised to 28 to 29 degrees F. for

As stock is required for spring shipments, enough of it to keep wrap. pers busy over a particular run, or enough for two or three days' shipping, is slowly thawed. Although the plant material stored under these conditions is not frozen "solid," there is the need for at least a 12 to 24hour waiting period before packaging for shipment. Inasmuch as the packing crate has been fitted with an inner paper liner, which insures a gradual thaw, a heavy tarp thrown over the top of three or four crates placed in common storage (running at a temperature of 55 to 60 degrees F.) will provide adequate protection for this intermediate step. Earlier in the spring, when temperatures are lower. a gradual 3 to 4-day thawing period in storages running between 35 and 40 degrees F. is suggested as the best method.

#### Packaging Perennials from Storage

After thawing the plant material can be sorted and graded, if late fall operations did not permit extensive handling prior to storage. It is recognized that in the general nursery operation, perennial materials grown under irrigation and taken to the packing shed are not uniform as to size. However, under such conditions the size differences are not so great as to discourage field-run crating of most perennial materials, provided a once-over gross inspection has been made to eliminate culls. Necessary trimming and division can be done easily just prior to packag-

The plant material is now ready for packaging. As was discussed in an article in the August 15 issue of the American Nurseryman, a general recommendation singling out the best method of packaging for any one particular class of perennials is difficult. However, based on general observations, perennial materials which have been held in refrigerated storages until a time immediately prior to shipping can best be packaged for mail-order shipment in a sealed polyethylene bag, overwrapped with 40 or 60-pound kraft. This procedure is recommended only for perennial material which is dormant, without new growth, and which does not have excess free moisture on the

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roots, crowns or old leaves. It has also been noted that materials which were allowed to remain in order-filling bins at room temperature for any length of time and which consequently required the addition of moisture to prevent drying often were the plants which showed the most mold development after packaging and shipment. This is an important consideration.

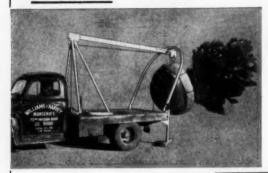
#### Perennials in Common Storage

For packaging greentop perennials such as carnations, purple bellflower and Shasta daisies, which have not been frozen, or which are just showing forced growth, the use of an open polyethylene bag overwrapped with kraft (tops open) is suggested. Again it should be emphasized that plants which have been spring dug and which show definite signs of growth are the most difficult and touchy types to hold and package. If plants must be shipped in this condition as much precaution as possible should be taken in order to maintain a separate environment for each plant part; i.e., the root system should be in a closed unit while the leaf area is allowed to remain open at the top, although bounded on the periphery by the polyethylene bag. If forcing material such as this is placed in a



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sealed bag, without a crown division. moisture loss, as a result of normal transpiration accompanied by high temperatures and poor aeration, will add to the rapid deterioration of the entire plant.

Another precaution which should be observed in packaging greentop perennials involves the location of this crown division. After the plant has been placed in the polyethylene bag and the kraft has been wrapped around the outside of the package it is imperative that the crown tie fall in a position as close to the base of the crown as possible. With the package tied at this location, the bundle can be cinched tightly, thereby dividing the package into two separate compartments.

If the tier accidentally places a string around any portion of the leaf and in the process of tightening bruises or crushes even a small portion of the structure, secondary mold and rot activity will rapidly develop to render the product unacceptable. In our shipping studies we have observed that mold activity originates or is associated with any broken or crushed plant part. In many cases mold activity may not be of such a nature as to cause the death of the plant, but its presence in any amount is often a cause for complaint by critical customers.

The wrapping procedure for spring-dug or forcing root and crown perennials such as delphinium, hollyhocks and hibiscus involves the same general techniques and precautions as used to package greentop types. A slight saving in the shipping cost can be realized on small orders by the use of a polyethylene root bag which covers only the root and crown portion of the specimen. The usual over-all 60-pound kraft covering will provide the package with adequate protection under normal shipping conditions.

#### Shipping Plants in Active Growth

At this point we should again consider a statement made earlier to the effect that as far as the mail-order nurseryman is concerned there is no substitute for prompt shipping. This statement applies only to spring-dug perennials or perennials which have not been held in a freezing storage until time of shipment. In other words, any plant material which has visibly started to grow is going to be difficult to package and ship to a distant market.

The normal tendency for a plant to continue to grow, and in so doing to require increased amounts of water, light and air in order to th in th CE th tu eı

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| Size 1 | Top .... 6 ins. Bottom ... 5 ins. High ... 6 ins. High ... 6 ins. High ... 6 ins. High ... 9 ins. Weight per 100 | Regular 15 lbs. Heavy 55 | Regular Weight Price 100.43.0 | 1000.432.5 | Heavy Weight Price 100.45.2 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25 | 1000.45.25

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carry on normal respiration and photosynthetic processes, completely modifies the applied packaging method. Whereas plant material which has been held completely dormant until the time of shipment can be satisfactorily shipped in a sealed polyethylene bag after thawing, the forcing perennial must be provided with an open top, which allows it to function normally for the short period of time during transit.

Material which is breaking bud at the time of shipment has still another strike against it if shipped late in the season. It is true that in an early run, as between April 15 and May 15, the customer may receive the forcing material in perfect condition and the chances are better than 80 per cent that it is going to live, even if it is not cared for after planting. At this season of the year soil temperatures are not high, rainfall is generally optimum and the air is not hot and dry. However, if these same plants, in as good condition as they were in April or May, were received by the same customer in mid-June and he failed to take care of them after planting, the chances of securing a good stand would be small, although existing weather conditions would govern to some degree the over-all plant stand. Fortunately for the nurseryman, however, the average customer who has taken enough interest in plant materials to purchase them usually will be sure that they

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are handled properly after planting.

This particular point has been emphasized in order to distinguish between methods of packaging plant materials in two distinct stages of growth, as well as to stress the point that survival in the customer's yard or garden is also a function of environment and care. I believe nurserymen are generally agreed that complaints on quality and requests for replacements are more numerous in the case of late shipments than in the case of early spring runs.

#### Prepackaging Perennials

This now brings us to an entirely new concept in perennial handling. that of prepackaging. The idea, of course, is not new, in that fruits and vegetables have been prepackaged for many years for the produce sections of supermarkets. Through limited experimentation and with the assistance of George Rose, of Henry Field Seed & Nursery Co., Shenandoah, Ia., we are able to report preliminary findings on this new method of handling perennial materials. Since freezing storages are particularly successful in keeping this type of material over winter, the nurseryman can use this innovation in the prepackaging scheme.

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In order to determine the best method of storing and packaging perennials for the prepackaging technique, representative perennial types were placed in both sealed and open polyethylene containers under three storage environments available at the Henry Field Seed & Nursery Co. Each plant was placed in a separate bag or sheet of polyethylene as the material was sorted and worked over in November and December. The packing crates were lined with a thin sheet of waxed paper before the packaged plants were crated. Complete sets of open and sealed packages of Shasta daisy, Canterbury bell, foxglove and gaillardia were placed in the following storage environments: (1) Freezing storage (28-29 degrees F.), (2) a cold room (34-40 degrees F.) and (3) common storage (50-65 degrees F.). The remaining plant types, generally packaged in sealed film, were placed in comparable crates and placed in the three storage units.

On March 18 and again on July 28, all plant materials were graded, using the following criteria: (1) Keeping quality, (2) general plant appearance, (3) presence of mold, (4) the need for trimming and (5) the presence or absence of etiolated, forced growths. The method of evaluation expresses the condition of the plant material from the stand-

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point of the prospective customer; for that reason it is extremely critical. Many of the individual treatments that received a low rating could not be considered worthless, inasmuch as a light trim would render the products marketable. The over-all trend, however, of the various perennial types can be followed from this preliminary study. Ageratum, lily of the valley and balloonflower, for example, can be stored in sealed polyethylene bags with good success under any of the storage treatments utilized. Consequently, plants of this type need not be held in freezing storage, a situation which permits more space in the freezer to be used for the handling of types more difficult to store.

Such perennials as coreopsis, pyrethrum and cornflower aster proved difficult to handle under any of the prevailing methods of packaging and storage and therefore require additional experimentation in order to determine the best methods to employ.

#### General Procedure

As dictated by this preliminary trial it is obvious that a general procedure for handling most perennials as prepackaged items is available for testing. As the plants are dug in the fall of the year, they can be brought in from the field and stored in a cool location. It is essential during this period that the plants not be stacked deeply or be allowed to heat. As soon as possible the material should be worked over, sorted, divided and trimmed. The perennials can then be placed in either a sealed or open polyethylene tube, depending on observations of keeping quality. Inasmuch as polyethylene melt seals at temperatures of from 217 to 221 degrees F., ordinary cellophane sealing devices, as such, are not adapted to the prepackaging operation. Consequently, commercial bar-type or roller-type scaling equipment, spray coated with Teflon, should be used. Twist-Ems or staples can also be applied to the package if small numbers of units are to be run. After the plant has been packaged as an individual unit it can be placed in the storage crate, which has been previously lined with a thin sheet of waxed or nursery paper. The crate, after it has been filled, is then either frozen or placed in cold storage to await the spring shipping rush.

As has been the case with older methods of storage, improved methods of handling do not substitute for quality. If the plant material has been grown and harvested under

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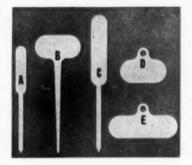
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optimum conditions it will generally store and ship in better condition than material handled haphazardly. This is especially true of the prepackaging sequence just described; it is essential that the plant material not be in an active, succulent stage of growth and not have any excess moisture adhering to the root or leaf surfaces. If in the normal fall digging operation it is impossible to lift stock that is totally dried off it is suggested that care be taken to dry the plant prior to prepackaging. It is believed that excess moisture, packaged with the plant, contributes to the rapid loss of quality, not during the storage period but after the package has been removed from storage and has been processed.

#### Possibilities in Vacuum Cooling

At the present time, growers on the west coast are commercially vacuum cooling lettuce on a large scale. This method of cooling, which actually involves cooling by evaporation, depends upon reduced pressures, which in turn lower the boiling point of water. The heat that is required for this evaporation process is in turn acquired from the product being cooled. Through the application of this principle, leafy, greentop perennials could conceivably be cooled to storage temperatures in a relatively short time. This would also have application during an unusually wet digging season when facilities are not adequate to permit drying of the product prior to packaging or storage. Not only would the field heat be removed from the product, thereby facilitating the prepackaging operation and improving quality, but also excess moisture contained on the vegetative organs could be reduced to a point that would permit losses to be significantly reduced. However, at the present time, the construction costs of vacuum cooling units do not make the use of these systems applicable to this phase of the packaging problem.

NORGARDS OF PORTLAND. Portland, Ore., is the new name of the former Portland Camellia Gardens. The word camellia led many people to think that the firm handled only camellias. Twenty acres of nursery stock have recently been added to the nursery.

RAY MATHEWS NURSERY, Warwick, R. I., has been awarded the contracts to furnish 400 trees for the city nursery and 150 trees for planting along streets, by the Providence board of contract and supply.

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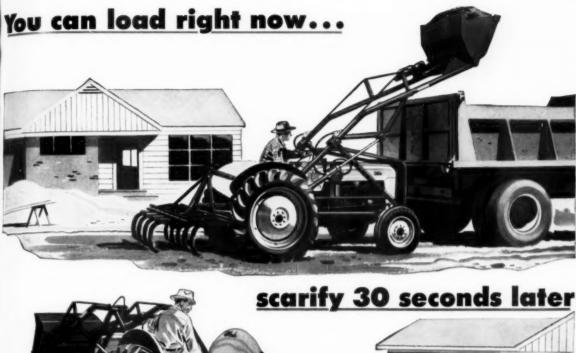
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